USER MANUAL

SAILOR®

SAILOR 150 FleetBroadband

Thrane & Thrane

SAILOR® 150 FleetBroadband

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Company web site
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Safety summary

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. Thrane & Thrane A/S assumes no liability for the customer's failure to comply with these requirements.

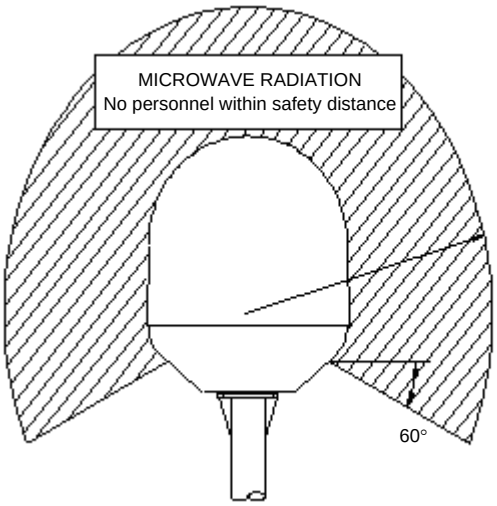
Observe marked areas

Under extreme heat conditions do not touch areas of the terminal or antenna that are marked with this symbol, as it may result in injury.

Microwave radiation hazards

During transmission the antenna in this system radiates Microwave Power.This radiation may be hazardous to humans close to the antenna. During transmission, make sure that nobody gets closer than the recommended minimum safety distance.

On the **SAILOR 150 FleetBroadband**, the minimum safety distance to the antenna panel on the focal line is 0.6 m, based on a radiation level of 10 W/m^2. The radiation level is 100 W/m^2 at a distance of 0.2 m from the antenna panel. Refer to the drawing below.



Safety distance:

0.6 m, 10 W/m^2
(0.2 m, 100 W/m^2)

Distance to other equipment

Do not move the antenna closer to radars than the minimum safe distance specified in the installation manual - it may cause damage to the antenna.

Compass Safe Distance:

SAILOR 150 FleetBroadband Terminal: min. 0.3 m.
SAILOR 150 FleetBroadband antenna: min. 1.2 m

Service

User access to the interior of the system units is prohibited. Only a technician authorized by Thrane & Thrane A/S may perform service - failure to comply with this rule will void the warranty.

Do not service or adjust alone
Do not attempt internal service or adjustments unless another person, capable of rendering first aid resuscitation, is present.

Grounding, cables and connections
To minimize shock hazard, the equipment chassis and cabinet must be connected to an electrical ground. The terminal must be grounded to the ship. For further grounding information refer to the Installation manual.

Do not extend the cables beyond the lengths specified for the equipment. The cable between the terminal and antenna can be extended if it complies with the specified data concerning cable losses etc.

All cables for the SAILOR FleetBroadband system are shielded and should not be affected by magnetic fields. However, try to avoid running cables parallel to AC wiring as it might cause malfunction of the equipment.

Power supply
The voltage range is 10.5 - 32 V DC; 11.5 A - 4 A. It is recommended that the voltage is provided by the 24 V DC bus on the ship. Be aware of high start-up peak current: 20 A@24 V, 5 ms.

If a 24 V DC power bus is not available, an external 115/230 VAC to 24 V DC power supply can be used.

Do not operate in an explosive atmosphere
Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Keep away from live circuits
Operating personnel must not remove equipment covers. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.
Failure to comply with the rules above will void the warranty!

About the manual

Intended readers

This manual is a user manual for the SAILOR 150 FleetBroadband system. The readers of the manual include anyone who is using or intends to use this system. No specific skills are required to operate the SAILOR 150 FleetBroadband system. However, it is important that you observe all safety requirements listed in the beginning of this manual, and operate the system according to the guidelines in this manual.

Most current version

This manual may not always reflect the latest software functionality of your SAILOR FleetBroadband system. To obtain the latest version of the manual, please enter the Thrane & Thrane web site www.thrane.com and download the latest version from **Service > Self Service Center > Downloads**, or acquire it from your distributor.

Manual overview

Note that this manual does not cover installation nor does it cover how to use the IP handset that comes with the system. For information on installation refer to the installation manual and for information on the IP handset refer to the user manual for the IP handset. Part numbers for both manuals are listed in the next section.

This manual has the following chapters:

- ***Introduction*** contains a brief description of the system and an overview of the BGAN services.
- ***Getting started*** explains how to insert SIM (Subscriber Identity Module) card and start up the unit. It also contains a short guide to making the first call.
- ***Operating the system*** explains how to use the system.
- ***Using the web interface*** explains how to use the built-in web interface of the terminal for configuration and daily use, and describes the available menus and settings, including advanced setup of interfaces.
- ***Troubleshooting*** contains a short troubleshooting guide and explains how to update software. It also describes the functions of the light indicator and the Reset button, and explains the event messages that may show in the web interface. Further, it gives information on where to get help if needed.
- ***Conformity*** contains declarations of conformity for the SAILOR 150 FleetBroadband system.

Related documents

The below list shows the documents related to this manual and to the SAILOR 150 FleetBroadbandsystem.

Title and description	Document number
SAILOR 150 FleetBroadband, Installation Manual Explains how to install the SAILOR 150 FleetBroadband terminal and the SAILOR 150 FleetBroadband antenna.	TT98-129218
SAILOR 150 FleetBroadband, Quick Guide A short guide to the most important functions of the **SAILOR 150 FleetBroadband** system.	TT98-129219
Thrane IP Handset, User Manual Explains the features and functions of the Thrane IP Handset. The IP handset works as a standard IP handset, but also serves as a user interface for the SAILOR 150 FleetBroadband system.	TT98-126059

Typography

In this manual, typography is used as indicated below:

Bold is used for the following purposes:

- To emphasize words.
  Example: “Do **not** touch the antenna”.
- To indicate what the user should select in the user interface.
  Example: “Select **SETTINGS** > **LAN**”.

Italic is used to emphasize the paragraph title in cross-references.
Example: “For further information, see *Connecting Cables* on page...”.

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Introduction

Welcome

Congratulations on the purchase of your SAILOR 150 FleetBroadband system!

SAILOR 150 FleetBroadband is a maritime broadband system, providing simultaneous high-speed data and voice communication via satellite through the BGAN (Broadband Global Area Network).

Applications include:

- Internet browsing
- E-mail
- Phone services
- Large file transfers
- VPN (Virtual Private Network) access to corporate servers

In this chapter

This chapter introduces the SAILOR 150 FleetBroadband system and gives an overview of the physical units and their features and functions.

It also gives an overview of the BGAN system and services.

Features and interfaces

The SAILOR 150 FleetBroadband system offers the following features and interfaces:

- Simultaneous voice and data communication over BGAN
- Full duplex, single or multi-user, up to: 150 kbps
- Standard Voice (4 kbps)
- 2 LAN (Local Area Network) ports with PoE (Power over Ethernet) for computers, e-hubs, IP handset etc.
- 1 Standard Phone port for standard phone
- 1 multi-purpose I/O connector with 5 configurable inputs/outputs
- 1 SIM slot for your BGAN SIM card
- Built-in DHCP/NAT router
- Built-in web interface allowing you to manage your phone book, messages and calls, and customize the terminal to your specific needs
- Input power: 10.5 - 32 V DC (11.5 A - 4 A)
- CE certified

Main units

Units overview

The **SAILOR 150 FleetBroadband system** includes the following main units:

- TT-3050C SAILOR 150 FleetBroadband antenna
- TT-3739A SAILOR 150 FleetBroadband Terminal
- TT-3670A IP Handset & Cradle, wired

SAILOR® 150 FleetBroadband antenna

The SAILOR 150 FleetBroadband system uses the TT-3050C antenna, which is a small size maritime 2-axis stabilized BGAN antenna.

For information on how to install the antenna, refer to the installation manual.

SAILOR®150 FleetBroadband terminal

Overview

The SAILOR 150 FleetBroadband Terminal is the controlling unit in the SAILOR 150 FleetBroadband system. It contains all user interfaces and a LED indicator and stores configuration data.

Tools for setup and daily use

The Thrane **IP Handset** can be used for displaying status and for entering the PIN code for the terminal. The IP handset connects to the LAN interface of the terminal. For information on how to use the handset, see the user manual for the IP handset.

The built-in **web interface** in the terminal is used for easy configuration and daily use. The web interface is accessed from a computer connected to the terminal, using an Internet browser. No installation of software is needed.
For further information on the web interface, see Chapter 4, *Using the web interface*.

SIM card

The terminal has a SIM (Subscriber Identity Module) slot located in the connector panel behind a small cover plate.

The terminal requires a dedicated FleetBroadband SIM card, which you get from your Airtime Provider.

The system requires a SIM card to go online and to access the settings of the terminal. However, using the web interface you can view the Dashboard and upload software without inserting a SIM card. Upload of software without a SIM card requires an administrator user name and password (default: “admin” and “1234”).

Thrane IP handset and cradle

IP handset

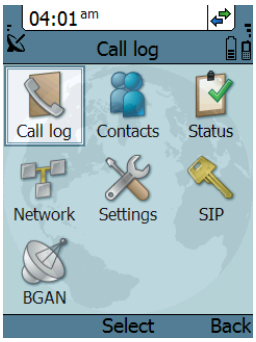
The Thrane IP Handset communicates using Internet Protocols (IP). The handset is not strictly dedicated to the SAILOR 150 FleetBroadband system, but can also be used in a public network as a standard IP telephone.

The IP handset is powered directly from the LAN interface using Power over Ethernet (PoE).

When the IP handset is used with the terminal, it communicates using IP between the handset and the terminal. However, on the BGAN network side of the terminal, calls are transmitted as circuit-switched calls.

When connected to the terminal the IP handset provides a dedicated BGAN menu with a subset of the terminal configuration options.

For more information on the functions of the IP handset, refer to the user manual for the IP handset.



IP cradle

The IP cradle serves as a holder for the IP handset.

The cradle connects to the coil cord from the handset and, using an Ethernet cable, to the terminal. You can mount the cradle on a wall or a desktop.

The Inmarsat BGAN system

What is BGAN?

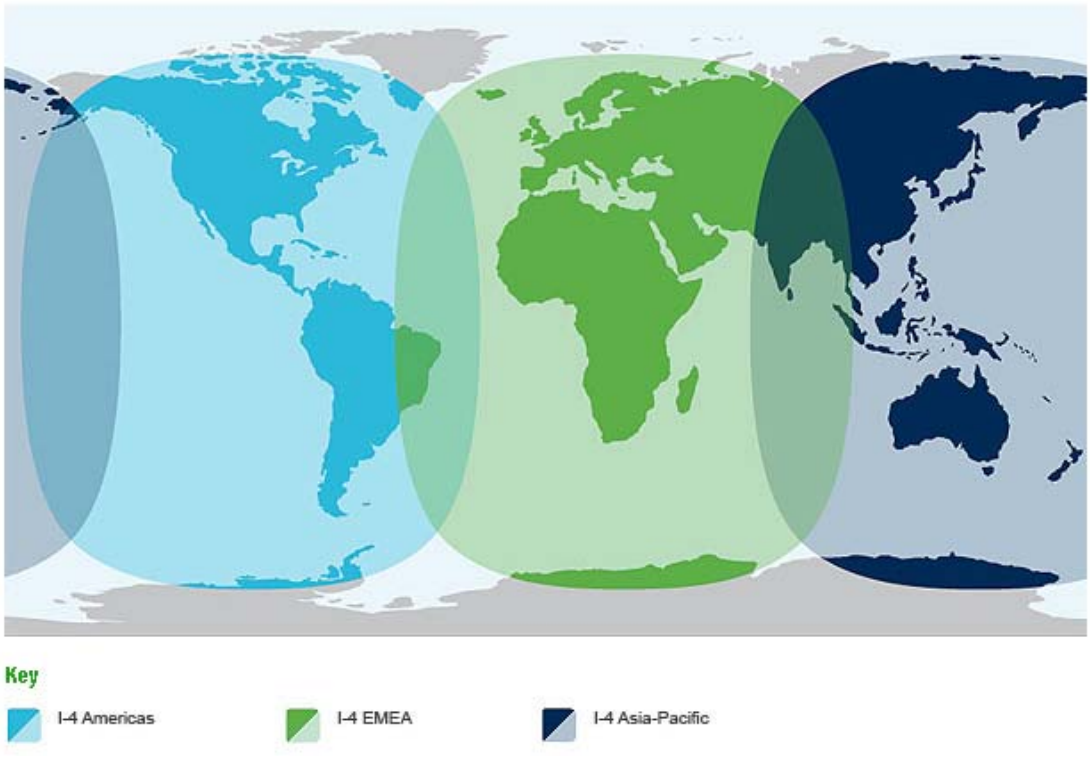
The Broadband Global Area Network (BGAN) is a mobile satellite service that offers high-speed data and voice telephony. BGAN enables users to access e-mail, corporate networks and the Internet, transfer files and make telephone calls.

The Inmarsat FleetBroadband service

FleetBroadband is a maritime communications service offered in the BGAN system. Based on 3G standards, FleetBroadband provides cost-effective broadband data and voice simultaneously.

Coverage

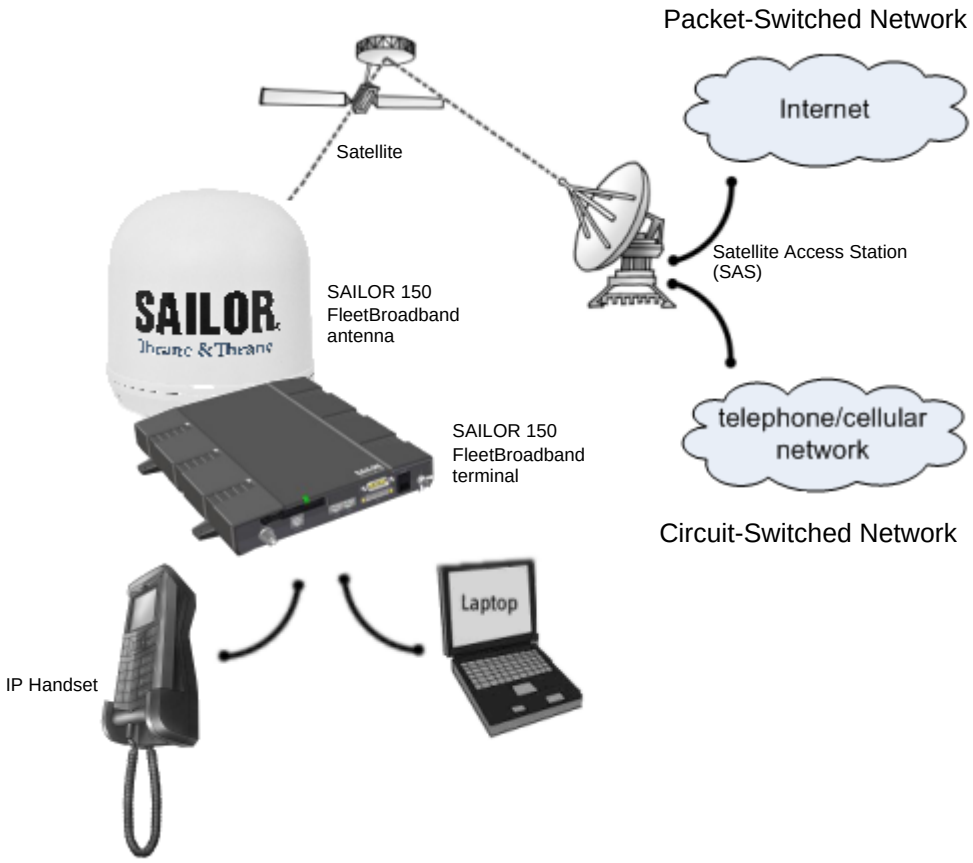
The Inmarsat® BGAN services are based on geostationary satellites situated above the equator. Each satellite covers a certain area (footprint). The coverage map below shows the footprints of the BGAN system. For updated information on coverage, see Inmarsat's home page at www.inmarsat.com.



Note The map above shows Inmarsat's expectations of coverage, but does not represent a guarantee of service. The availability of service at the edge of coverage areas may fluctuate.

Overview of the BGAN FleetBroadband system

A complete BGAN FleetBroadband system includes the SAILOR 150 FleetBroadband terminal with connected peripherals, a SAILOR 150 FleetBroadband antenna, the BGAN satellite, and the Satellite Access Station (SAS). The satellites are the connection between your terminal and the SAS, which is the gateway to the worldwide networks (Internet, telephone network, cellular network, etc.).



The BGAN services supported by SAILOR®150 FleetBroadband

Supported services

The BGAN services currently supported by the SAILOR 150 FleetBroadband comprise:

- A Packet-Switched (PS) connection to the Internet
- A Circuit-Switched (CS) dialed connection for voice
- Short Messaging Service (SMS)

Packet data service

The packet data service available for the SAILOR 150 FleetBroadband offers a **Standard IP** (background) connection where several users can share the data connection simultaneously. This type of connection is ideal for e-mail, file transfer, and Internet and intranet access. The user pays for the amount of data sent and received.

Note The SAILOR 150 FleetBroadband only supports one packet switched connection to the Internet at a time per SAILOR 150 FleetBroadband system.

Circuit-Switched (dialed) service

The circuit-switched service available for the SAILOR 150 FleetBroadband offers **Standard Voice**, which is a low-tariff connection for voice only. The voice signal is compressed to 4 kbps, which reduces the bandwidth use and consequently the tariff.

Note The BGAN system only supports one external circuit switched call at a time per SAILOR 150 FleetBroadband system.

SMS service

The BGAN system provides a Short Messaging Service (SMS) for sending and receiving SMS messages to and from the terminal.

Supplementary services

The BGAN system also provides the following supplementary services:

- Call hold
- Call waiting
- Call forwarding
- Voice mail
- Call barring

Limitations

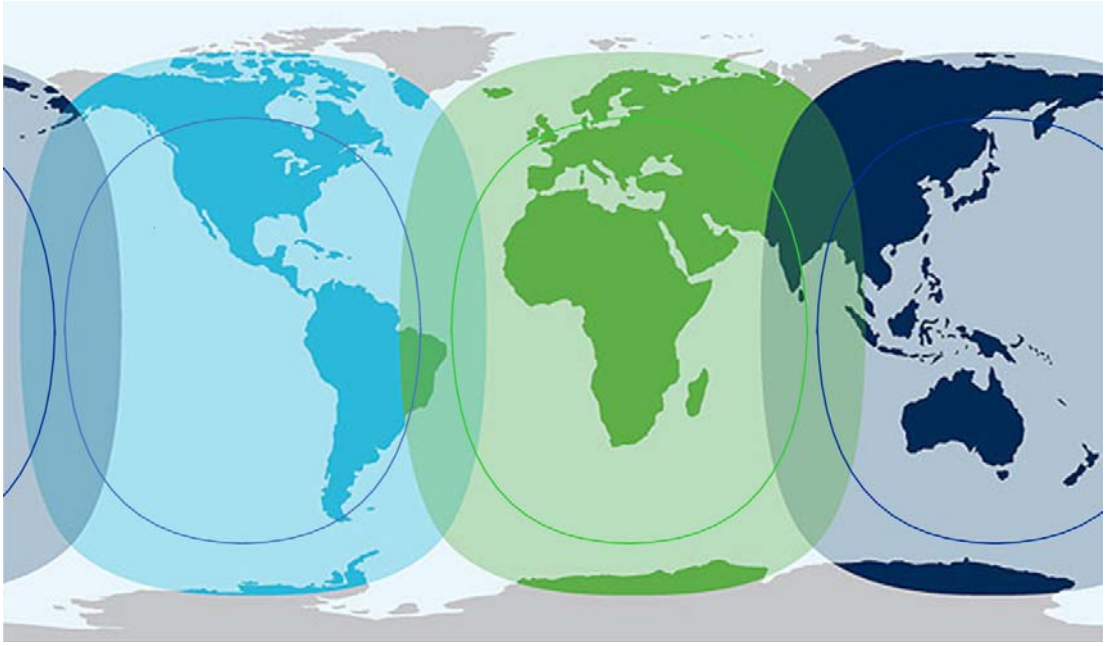
SIM lock

The supplier may have locked the SIM card to a specific provider. For further information, contact your supplier.

Limitations in available services

The services available depend on your airtime subscription. Your SIM card may not allow for all the services described in this manual.

Also, some services may not be available at the edge of coverage areas, i.e. in low elevations. The thin lines in the coverage map below enclose the areas with an elevation angle of 20 degrees or more.



For further information on coverage, please refer to the Inmarsat home page at www.inmarsat.com.

Access to services and interfaces

The following table shows which equipment and interfaces you can use to access the services listed in the left column.

Service	Interface on the terminal	
	Phone	LAN (PoE)
Circuit-Switched (telephone)	Analog telephone	IP handset
Packet-Switched (Internet, data transfer etc.)		Computer
SMS		Computer with web interface

Getting started

In this chapter

This chapter describes how to start up the system and make the first call or data session.

For information on how to install the system, insert SIM card and connect cables, refer to the installation manual for the SAILOR 150 FleetBroadband system.

Before you start

Operation at high temperatures

CAUTION! In very high ambient temperatures, do not touch areas of the terminal that are marked with this symbol.

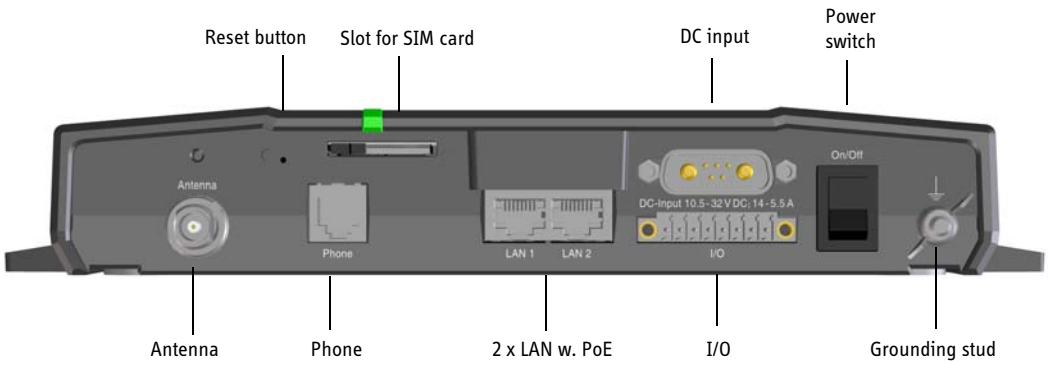
If the terminal is installed in a location where the ambient temperature may exceed 50°C, we recommend placing the terminal where unintentional contact is avoided. Note that the maximum allowed ambient temperature is 55° C.

If the maximum ambient temperature does not exceed 50°C, the terminal can be placed in a public area.

For further information on installation, refer to the installation manual for the SAILOR 150 FleetBroadband system.

Connector panel

The drawing below shows the connector panel of the SAILOR 150 FleetBroadband terminal.



Starting up the terminal

SIM card

Note that the SAILOR 150 FleetBroadband terminal requires a SIM card dedicated to FleetBroadband. The terminal can only access the BGAN network when the right type of SIM card is installed. For information on how to insert the SIM card, refer to the installation manual.

Switching on the terminal

Using the Power switch

To switch on the terminal, use the On/Off switch in the connector panel. It normally takes one or two seconds for the terminal to switch on.

Using the ignition system

Normally the ignition function is not used in maritime installations. Instead you may want to use the remote on/off function described in the next section.

If you have connected the ignition system of your vessel to the I/O connector, you may leave the power switch in the “on” position and the terminal will switch on/off when you start/stop the engine of your vessel.

When the engine is stopped the terminal is in standby mode. The standby current is max. 15 mA when the ignition is off. For information on how to connect to the Ignition pins in the I/O connector, refer to the installation manual for the SAILOR 150 FleetBroadband system.

You must set up the ignition function in the web interface. For further information, see *Configuring the I/O interface* on page 85.

Using a remote on/off switch

If an external switch is connected to the remote on/off pins in the DC connector, you may leave the power switch in the connector panel in the “on” position and use the remote switch to turn the terminal on and off. When the remote switch is off, the terminal is off. However, if you leave the power switch on the terminal in the “on” position, you can always switch the terminal back on with the remote switch. The standby current when the remote switch is off is max. 2 mA. For further information on the remote on/off function, refer to the installation manual for the SAILOR 150 FleetBroadband system.

Power up completed

When the terminal is switched on, the Power indicator in the terminal lights green.

You can now access the terminal settings, but the terminal is not ready for making calls or running data sessions until the system is registered on the BGAN network. You may have to enter a SIM PIN before the system can register. For further information, see *Entering the SIM PIN for the terminal* on page 15 and *Registering with the BGAN network* on page 17.

To switch off the terminal tip the Power switch back. It takes 5 to 10 seconds to power down the terminal. Alternatively use the ignition or remote on/off function described above.

Connecting the Thrane IP handset

Power supply (PoE)

The Thrane IP Handset is powered from the LAN interface, using Power over Ethernet. The total output power from the two interfaces is 32 W.

Both interfaces can support devices of power class 1, 2 and 3 (4, 7 and 15.4 Watt), as long as the total power consumption does not exceed 32 W. If the limit is exceeded, the LAN ports are prioritized so that LAN port 1 has the highest priority and port 2 is closed down. For this reason, we recommend connecting your IP handset to LAN port 1.

In case of power hold-up (failure on input power), PoE will be turned off completely.

Starting up the Thrane IP Handset

Note The SAILOR 150 FleetBroadband only supports connection of one IP handset, which must be the Thrane IP Handset.

To connect the Thrane IP Handset, do as follows:

1. Connect the Ethernet cable from the Thrane IP Handset/cradle to one of the LAN (PoE) connectors on the terminal as described in the user manual for the handset.

   Note We recommend connecting to LAN port 1, because in case of insufficient power to the LAN (PoE) interface port 2 will be closed down first.

2. When the handset is connected to the LAN interface it is automatically registered in the terminal and assigned the local number 0501 and password 0501.

3. The handset starts up automatically.

When the display shows this symbol in the upper right corner, the handset is ready for making a call.

If the handset is not ready for making calls, it may be because the BGAN terminal is waiting for a SIM PIN. To check this, enter the handset menu system and select **BGAN > Status > PIN status**.

You can enter the SIM PIN using the IP handset. For details, see *Entering the SIM PIN using a phone or IP handset* on page 15.

Connecting a computer

Before connecting to the LAN interface

For the LAN interface to work without any further setup, the connected computer must be set up to obtain an IP address and a DNS server address automatically.

To check this on your computer (Windows XP), do as follows:

1. Go to **Start > Settings > Control Panel > Network Connections**.
2. Right-click on the LAN connection you want to use.
3. Select **Properties**, highlight **Internet Protocol (TCP/IP)**.
4. Click **Properties**.
5. Make sure that the following is selected:
   - Obtain an IP address automatically
   - Obtain DNS server address automatically

Connecting a computer to the LAN interface

To connect a computer to the LAN interface, do as follows:

1. Power up your computer.
2. Connect your LAN cable between the network connector on your computer and one of the LAN connectors on the terminal.
3. When the computer and the terminal are ready, check the connection e.g. by accessing the built-in web interface of the terminal with your browser. For further information, see *Accessing the web interface* on page 36.
   You may have to disable the Proxy server settings in your browser. For further information, see *Proxy settings when accessing the web interface* on page 35.

For information on how to connect to the Internet, see *Standard connection to the Internet (default)* on page 19.

For information on how to configure the LAN interface on the terminal, see *Configuring the LAN interface* on page 56.

Entering the SIM PIN for the terminal

Do you need a SIM PIN?

Depending on your SIM card, you may have to enter a SIM PIN to use the system. Your SIM PIN is supplied with your SIM card. You can enter the PIN using a standard phone, the IP handset or the web interface.

Note Using an Administrator user name and password you can change the PIN and enable or disable the use of a PIN. For further information, see *Setting up the use of SIM PIN in the terminal* on page 96.

For information on how to connect the IP handset or computer you are going to use, see *Connecting a computer to the LAN interface* on page 14 or *Connecting the Thrane IP handset* on page 13.

Entering the SIM PIN using a phone or IP handset

To enter the SIM PIN

If you have a phone connected to the terminal, you can use it to enter the SIM PIN for the terminal at start up.

Do as follows:

- **For an analog phone**:
  Pick up the phone. When the terminal is waiting for a PIN, you will hear 2 beeps - pause - 2 beeps - etc.
  Dial <**PIN**> followed by **#**.
  When you hear a “busy” tone or a dialing tone, the PIN has been accepted and you can hang up or dial a number.
- **For t**he **Thrane IP Handset:**
  Select the **BGAN** menu, select **Enter PIN** and enter the administrator user name and password for the terminal. Then enter the PIN for the terminal.
  Note that the menu item “Enter PIN” is only available if the terminal is waiting for a PIN.

Wrong SIM PIN

Analog phone:
If, instead of the busy tone or dialing tone, you continue to hear 2 beeps - pause - 2 beeps - etc., it means the SIM PIN was not accepted. Check that you have the correct PIN and try again.

If a wrong PIN has been entered three times in the terminal, you will hear 3 beeps - pause - 3 beeps - etc. This means you have to enter the PUK (PIN Unblocking Key) provided with your SIM card.
After entering the PUK, you must enter a new PIN of your own choice (4 to 8 digits long).

Dial the following:

<PUK> * <New PIN> * <New PIN> followed by **#** or off-hook key.

Example: If the PUK is 87654321 and the new PIN is 1234, dial
87654321 * 1234 * 1234 followed by **#** or off-hook key.

If you enter 10 wrong PUKs, the SIM card will no longer be functional. Contact your Airtime Provider for a new SIM card.

IP handset:
After having entered the user name and password for the terminal you have 3 attempts to enter the SIM PIN, before you are asked to enter the PUK (Pin Unblocking Key). The PUK is supplied with the SIM card for your terminal.

Enter the PUK followed by a new PIN of your own choice. The PIN must be from 4 to 8 digits long.

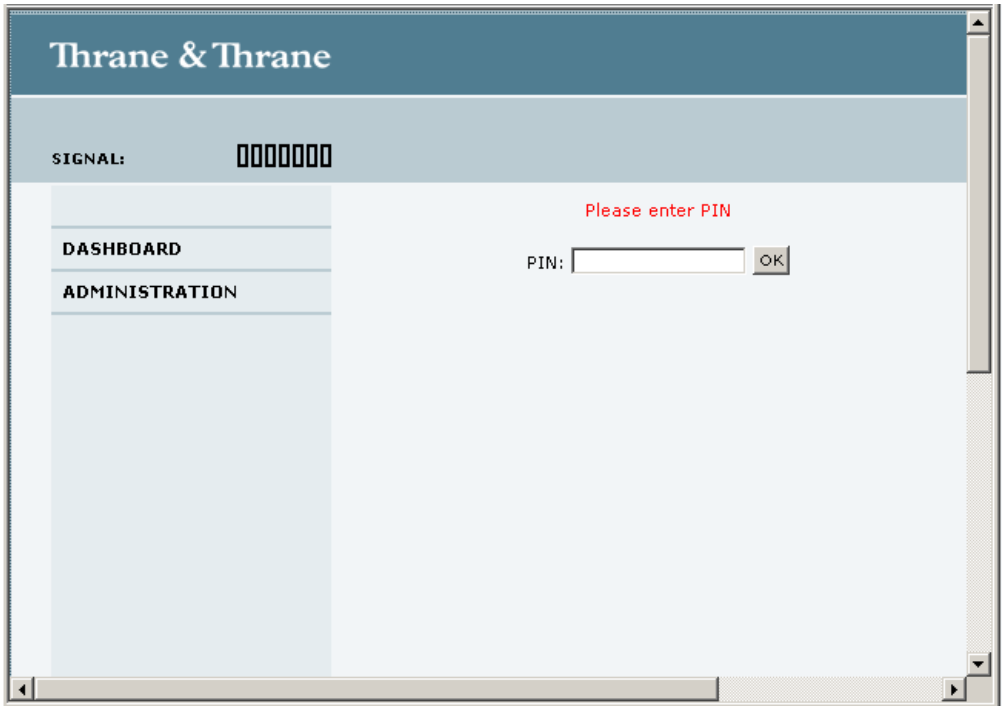
If you enter a wrong PUK 10 times, the SIM card will no longer be functional, and you have to contact your Airtime Provider for a new SIM card.

Entering the SIM PIN using the web interface

To enter the SIM PIN

Do as follows:

1. On a computer connected to the terminal, open your browser and enter **http://ut.bgan** or the IP address of the terminal in the address bar (default IP address: http://168.192.0.1).
   If your SIM card uses a PIN and the PIN has not yet been entered, the web interface will open on the PIN page.



2. Type in the PIN and click **OK**.
   When the PIN is accepted, the web interface opens the Dashboard and is ready for use. If the PIN is not accepted, see the next section *Wrong PIN*.

For further information on the web interface refer to *Using the web interface* on page 34.

Wrong PIN

You have 3 attempts to enter the PIN in the web interface, before you are asked to enter the PUK (Pin Unblocking Key). The PUK is supplied with your SIM card.
Enter the PUK followed by a new PIN of your own choice. The PIN must be from 4 to 8 digits long.

If you enter a wrong PUK 10 times, the SIM card will no longer be functional, and you have to contact your Airtime Provider for a new SIM card.

Registering with the BGAN network

When the SIM PIN is accepted by the terminal, the SAILOR 150 FleetBroadband system automatically starts the registration procedure on the BGAN network.

You can monitor the registration procedure in two ways.

- Connect the Thrane IP Handset and watch the procedure in the display.
- Connect a computer, access the internal web interface of the terminal and watch the Status field in the DASHBOARD. For details, see *Using the Dashboard* on page 40.

The normal startup procedure is shown as follows:

1. **Searching**. The terminal has instructed the antenna to search for the BGAN signal.
2. **Registering**. The terminal is attempting to register with the Satellite Access Station (SAS).
3. **Ready**. The terminal has registered and attached to the SAS and is ready to accept a service request (a call or a data session).

Note that the registration procedure may take several minutes.

Making the first call

Introduction

When the terminal is registered with the BGAN network you are ready to make or receive the first call.

The following sections provide a short guide to making calls. For more detailed information, see *Making or receiving a phone call* on page 23.

Making a call from the terminal

To make a call from a phone connected to the terminal, dial

00 <country code> <phone number> followed by **#** or off-hook key.

Example: To call Thrane & Thrane in Denmark (+45 39558800) from an analog phone, dial **00 45 39558800 #**

Making a call to the terminal

Note | By default, any handset connected to the terminal will ring on incoming calls.

To make a call to a phone connected to the terminal, dial

+ <Mobile number>

- **+** is the international call prefix[1] used in front of the country code for international calls.
- **Mobile number**: The mobile number of the terminal you are calling. The first part of the number is always 870, which is the "country code" for the BGAN system.

Example: If you are calling from Denmark and the mobile number is 870772420567 on your terminal, dial **00 870 772420567**.

If the mobile number is listed in the web interface, you can look it up by selecting **PHONE BOOK > Mobile numbers**.
If the number is not listed, refer to the documents provided with your airtime subscription. We recommend saving the mobile number in the web interface. See *Viewing and editing the mobile number* on page 46.

Making a call from one terminal to another

To make a call from one terminal to another, dial **00 <Mobile number>**.

1. The plus sign indicates the code required to dial out of one's country code area, such as 00 in most of Europe, 011 in the United States, and other short codes in other parts of the world.

Standard connection to the Internet (default)

Note This section only describes a Standard Internet connection with default settings on the terminal. For information on other scenarios, see *Setting up the LAN network* on page 59.

By default, the terminal does **not** automatically connect to the Internet when you connect your computer or other equipment to the LAN interface. You must activate your connection from the Dashboard in the web interface or from the Thrane IP Handset.

Activating the connection from a computer (web interface)

To activate the connection from a connected computer, do as follows:

1. Access the web interface by opening your browser and entering **http://ut.bgan** or the IP address of the terminal in the address bar.
   "http://ut.bgan" translates into the IP address of the terminal (if your computer is set up as described in *Before connecting to the LAN interface* on page 14). The default IP address is 192.168.0.1.

2. Click **Start Standard** under **PROFILES ON LAN** at the bottom of the page.

3. Check the connection e.g. by entering a web site.
   The field ONGOING DATA SESSIONS will show the IP address for the data session you started.

Activating the connection using the Thrane IP Handset

To activate the connection using the Thrane IP Handset, do as follows:

1. Connect the Thrane IP Handset to one of the LAN ports (preferably port 1).
   The handset starts up automatically.

2. Select **Menu > BGAN** in the handset.

3. Select **Connect**.

4. Use the left/right keys to find the network user group for the application you want to start.

5. Press **Start** to start the connection.
   A confirmation window is displayed.

6. Press **Yes** to continue.
   The Thrane IP Handset sends a command to the terminal to start the selected connection.

7. Check the connection e.g. by entering a web site from a connected computer.

Operating the system

In this chapter

This chapter describes how to use the SAILOR 150 FleetBroadband system.

It does not describe advanced configuration of interfaces. For this type of information, refer to the "Configuring..." sections for the interfaces in Chapter 4, *Using the web interface*.

General

Tools for setup and use

Overview

You can use the **Thrane IP Handset** for viewing status, using the phone book of the terminal and for entering the PIN, but for enhanced use and for configuration of interfaces, you must connect a computer.

With a computer and a browser, you can use the built-in **web interface** to set up the terminal.

The IP handset

When you connect the Thrane IP Handset to one of the LAN (PoE) connectors on the terminal you can use the handset display and keypad to enter the PIN or to view the status of the terminal.

The menu system in the IP handset includes the following items for the terminal:

- BGAN menu:
  - Starting and stopping your data connection
  - Viewing C/No (signal strength) for the system
  - Viewing status ("Ready", "Registering" etc.) for the system
  - Viewing the software version of the terminal
  - Entering the PIN and PUK for the terminal
  - Viewing active events
  - Viewing GPS status
- Contacts:
  - Inclusion of the terminal phone book (not editable) in the IP handset Contacts
- SIP (Session Initiation Protocol):
  - Selecting/viewing the SIP profile used for communication with the BGAN terminal
- Date and time:

- Possibility of using UTC time received from the BGAN satellite

For further information, see the user manual for the IP handset.

The web interface of the terminal

The web interface is a built-in web server for setting up and controlling the terminal, using a connected computer with a browser. No installation of software is required.

With the web interface you can:

- Enter the SIM PIN for the terminal
- DASHBOARD page:
  - start and stop data sessions
  - view information on calls to/from the terminal
  - view status of the terminal and antenna
  - view properties of the terminal and antenna
- PHONE BOOK page:
  - view and edit the phone book
- MESSAGES page:
  - send and receive SMS messages
- CALLS page:
  - view the call log (outgoing, received and missed calls and data)
- SETTINGS page:
  - set up the interfaces of the terminal
  - set up call services
  - upload software
  - set up network user groups (requires administrator password)
  - select the satellite to use for connection to the BGAN network
  - set the language in the web interface
- ADMINISTRATION page:
  - change the SIM PIN for the terminal
  - set up user rights (requires administrator password)

For information on how to use the web interface, see *Using the web interface* on page 34.

Using a phone

Available interfaces

Two types of voice equipment connect to the terminal:

Standard analog phone: The terminal has one phone connector for connecting a standard analog phone.

IP handset: The terminal has two LAN connectors with Power over Ethernet for connecting the Thrane IP handset. For information on the features and functions of the Thrane IP Handset, refer to the user manual for the handset.

For information on how to connect to the interfaces, see the installation manual for the SAILOR 150 FleetBroadband system.

Making or receiving a phone call

Making a call

First connect your phone to the relevant interface. For further information, see the Installation Manual.

You have different options for making a call:

- **Short Dial**. If the number is in the phone book of the terminal, you can use the Short Dial number, which is found in the first column of the phone book in the web interface. See *Short dial* on page 44.
  Simply dial **00** <**Short Dial**> followed by **#** or off-hook key.

  Example: To call entry number 4 in the phone book, dial **004** followed by **#** or off-hook key.

- **Manual Dial.** To make a call, dial
  00 <country code> <phone number> followed by **#** or off-hook key.

  Example: To call Thrane & Thrane in Denmark (+45 39558800) from an analog phone, dial **00 45 39558800 #**

- **Call from phone book or call log** (only IP handset).
  - Enter the phone book of the IP handset, scroll to the wanted number and press the off-hook key, or
  - press the off-hook key from the main screen to display the latest calls in the call log. Then scroll to the wanted number and press the off-hook key again.
    Note that this is the call log of the IP handset, not of the terminal.

If there was an error establishing the connection, refer to the *Troubleshooting Guide* on page 107.

If you are using the IP handset, the handset may show an error message.
Depending on the type of error, the web interface may also show an error message. See *Viewing the Event list or the Event log* on page 102.

Receiving a call

To be able to receive a call, the phone must be connected to the relevant interface on the terminal.

By default, any handset connected to the Phone interface or the LAN (PoE) interface will ring when the mobile number is called. Note, however, that Standard must be selected when setting up the IP handset and the analog phone. Refer to *Configuring the Phone interface* on page 70 and *Enabling/Disabling incoming calls to a connected Thrane IP Handset* on page 81

Call log

Information of missed calls is stored in the call log of the terminal. You can view the call log in the web interface under **CALLS**. For further information, see *Viewing the lists of calls and data sessions* on page 48.

Making a call to the terminal

To make a call to a phone connected to the terminal, dial

+ <Mobile number>

- **+** is the international call prefix[1] used in front of the country code for international calls.
- **Mobile number**. The first part of the mobile number is always 870, which is the "country code" for the BGAN system. If the mobile number is listed in the web interface, you can look it up as follows:
  Connect a computer, access the web interface and select **PHONE BOOK > Mobile numbers**. For further information, see *Viewing and editing the mobile number* on page 46.
  If the mobile number is not available in the web interface, refer to the documents included with your airtime subscription.

Receiving a voice mail message

If a call to the SAILOR FleetBroadband system is not answered the caller can leave a voice mail message with Inmarsat's voice mail service. Then an SMS is sent to the SAILOR FleetBroadband messaging system to alert you that there is a voice message. The SMS has the contents:

- Number called from
- Date and time the voice mail message has been received
- Number to call to listen to the voice mail message

To see that a new SMS has arrived you open the web interface. For further details see *Receiving a message* on page 51.

1. The plus sign indicates the code required to dial out of one's country code area, such as 00 in most of Europe, 011 in the United States, and other short codes in other parts of the world.

Making local phone calls

You can make local calls between phones connected to the terminal.

Local phone numbers always start with 0.

For an overview of the numbers assigned to each type of interface, see *Local numbers and special-purpose numbers* on page 25.

To make a local call, dial **<local number>** followed by **#** or off-hook key.

Dialing functions

Local numbers and special-purpose numbers

There are a number of dialing functions available in the terminal. The following list shows the allocated special-purpose numbers for the terminal.

Note Remember the "0" at the start when you dial a local phone number. If you accidently dial a 3-digit number, you may get one of Inmarsat's short dial numbers in stead of a local number.

Number	Function
0 * followed by **#** or off-hook key	Redial last called number on this interface.
00 * followed by **#** or off-hook key	Redial last answered call on this interface. Note: If the last answered number is unlisted, you are not allowed to dial back.
00 followed by one of the numbers **1-199** and **#** or off-hook key	Short dial phone numbers in phone book.
0301 followed by **#** or off-hook key	Local call to analog phone.
0501 followed by **#** or off-hook key	Local call to IP handset.

Dialing prefixes

Apart from the numbers above, the terminal uses the following dialing prefixes:

- **#31#** before the phone number will hide the caller's phone number to the recipient.
- ***31#** before the phone number will show the caller's phone number to the recipient where it would otherwise be hidden, e.g. because the number is an ex-directory number.
- For analog 2-wire telephones, use the R key during a call to get access to a supplementary services function. The supplementary services functions supported by the terminal are described in the following sections.

Handling waiting calls

During a call, if a second party tries to call you, you may hear a Call Waiting indication. The Call Waiting indication is two beeps and a pause of 3 seconds, then two beeps again etc. If no action is taken, the waiting call is released.

In the web interface you can enable or disable the call waiting indication. For further information, see *Call waiting* on page 76.

Note Different types of phone have different methods/keys for the functions listed below. If you have another type of phone than the ones listed below, refer to the documentation for your phone/handset.

For phones with an **R** key (normally on analog 2-wire phones): When you receive a Call Waiting indication, you have the following options:

If you want to:	Do as follows (standard 2-wire phone):
Clear the current call, and accept the waiting call.	Press **R 1 #**
Hold the current call, and accept the waiting call.	Press **R 2 #**
Ignore the waiting call.	Take no action.
Reject the waiting call.	Press **R 0 #**

Holding a call

During a call, you may place the initial call on hold while another call is made.

Note

Different types of phone have different methods/keys for the functions listed below. If you have another type of phone than the ones listed below, refer to the documentation for your phone/handset.

Thrane IP Handset:

Select **Options > Hold** in the IP handset. For further details, refer to the section “Handling calls” in the user manual for the **Thrane IP Handset.**

Analog 2-wire phones with R key:

If you want to:	Do as follows (standard 2-wire phone):
Place a call on hold.	Press **R 2 #**.
Place the existing call on hold and establish a new call.	Press **R** and dial the second phone number followed by **#**.
Shuttle between the two calls.	Press **R 2 #** (irrespective of whether the second call was acquired using Call Hold or acceptance of Call Waiting.)
Clear the held call, if no waiting call exists.	Press **R 0 #**.
Clear an active call and return to the held call.	Press **R 1 #**. Note that this is only possible if no waiting call exists.

Transferring a call

When you receive a call, you can transfer this call to another phone connected to the terminal.

Note

Different types of phone have different methods/keys for the functions listed below. If you have another type of phone than the ones listed below, refer to the documentation for your phone/handset.

Thrane IP Handset:

Select **Options > Transfer** in the IP handset. For further details, refer to the section “Handling calls” in the user manual for the **Thrane IP Handset.**

Analog 2-wire phones with R key:

Do as follows to transfer a call:

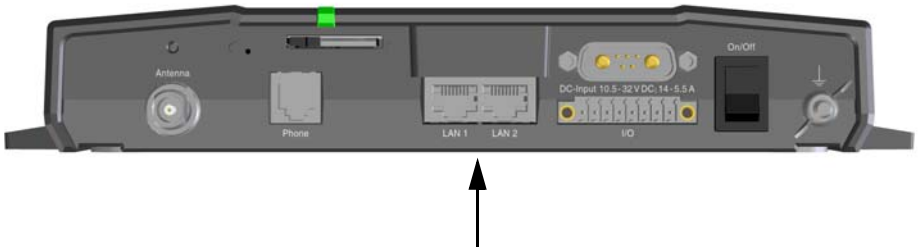
1. Press **R 4 * <local number> #**.
   The phone with the local number you dialed starts to ring.

2. You now have two options.
   - Hang up. The phone or headset you transferred the call to continues to ring. When the call is answered, a connection is established between the initial caller and the new recipient.
   - Do not hang up. When the new recipient answers, you can have a conversation before hanging up. When you hang up, the call is handed over to the initial caller.

Using a computer

Interfaces

The terminal has two LAN connectors for connecting computers, the Thrane IP Handset or other LAN equipment.



For information on how to connect to the interfaces, see the installation manual for the SAILOR 150 FleetBroadband system.

Working with network user groups

Two network user groups are available to the users of the terminal:

- **The Default group**: By default, all users belong to the Default network user group, which provides a shared Standard connection to the Internet using the built-in router functionality of the terminal. This group does not allow Bridge mode.
- **Group 0**: A second group used for Bridge mode connection (Bridge mode is an exclusive connection, with NAT disabled in the terminal).
  If you want to have a direct Bridge mode connection use this network user group.

For further details, see *Setting up the LAN network* on page 59.

Connecting to the Internet

Default setup

By default, any IP device that is connected to the terminal belongs to the **Default** network user group. It uses a Standard shared IP connection, which you must manually activate from the web interface. For further information on network user groups, see *Setting up a Bridge mode connection* on page 62 and *Setting up the Default network user group* on page 60.

Accessing your data sessions

Data sessions available for the current user are displayed under **PROFILES ON LAN** at the bottom of the **DASHBOARD**.

- Profiles that are currently active are displayed as a link with the text “Stop <name of profile>”.
- Profiles ready to be activated are displayed as a link with the text “Start <name of profile>”.

Start/stop Standard IP on the LAN interface

By default, Standard IP is not automatically activated on the terminal. If you want Standard IP to be automatically activated at start-up, the administrator can enable automatic activation under **SETTINGS > LAN > Network user groups**. For details, see *Setting up the Default network user group* on page 60.

When automatic activation is disabled in the Network user groups page, you can manually start/stop your Standard IP profile from the Dashboard by clicking **Start <name of profile>** or **Stop <name of profile>** under **PROFILES ON LAN** at the bottom of the page.

Accessing the terminal from a remote location

To access the terminal, do as follows:

1. Set up the terminal as described in *Remote management* on page 100.

2. Start the connection locally, e.g. from the Dashboard in the web interface accessed by a computer connected to the terminal.

3. After starting the connection, note the IP address in ONGOING DATA SESSIONS in the web interface. This is the IP address you must use afterwards to access the terminal.

4. On the remote computer, open your web browser.

5. Enter the IP address of the terminal followed by colon and the port number **http://<ip address>:<incoming port>**.
   - <ip address> is the address from step 3. above.
   - <incoming port> is the port you defined in *Remote management* on page 100.

   Example: If the IP address of the terminal is 161.30.180.12 and the incoming port number defined in the Remote management page in the web interface is 8080, enter **http://161.30.180.12:8080**.

You should now be connected to the terminal from your remote computer.

Using PPPoE (Point-to-Point Protocol over Ethernet)

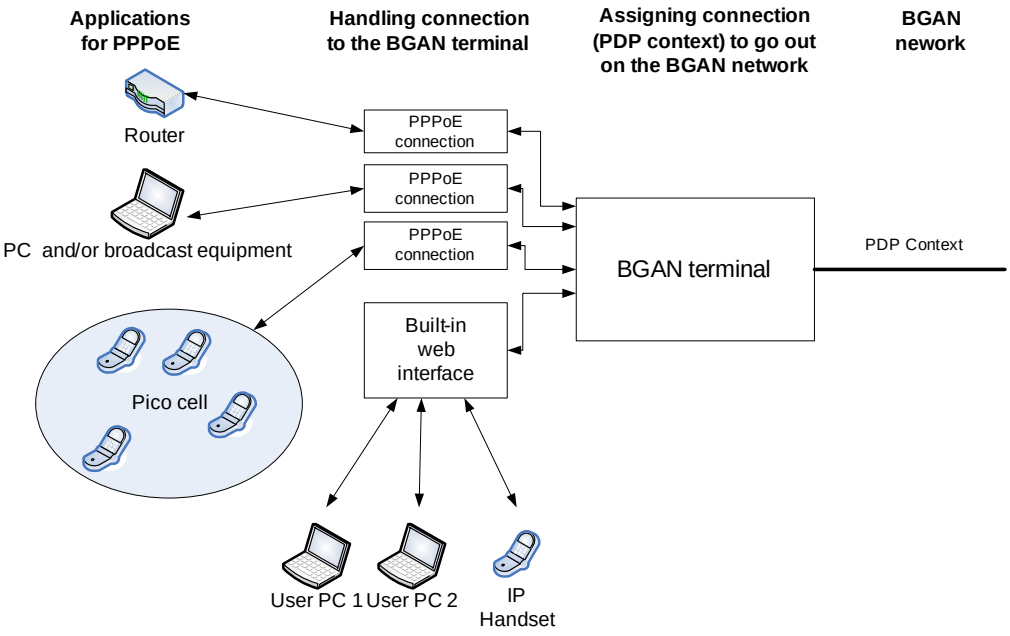
Overview

You can establish a PPPoE connection to the BGAN network using the SAILOR FleetBroadband system. Use PPPoE if you want to control your connection independently of the web interface and the IP handset.

Possible applications are:

- Connecting a router
- Connecting broadcast equipment, optionally through a PC
- Establishing a Picocell for the use of cell phones

The following drawing shows connections managed through PPPoE and web interface respectively.



Configuring the connected equipment for PPPoE

To use PPPoE with your SAILOR system, first enable PPPoE in your terminal. Refer to *Enabling PPPoE (Point-to-Point Protocol over Ethernet)* on page 69.

After enabling PPPoE in the terminal, you must configure your equipment.

How to do this depends on the type of equipment. Refer to the user documentation of the equipment. As a minimum, you need to configure the following parameters in your equipment in order to make PPPoE work with the terminal:

- User name and password.
  The user name and password can be left blank (or insert user name: **void** and password: **void**). Then the registration on the APN is most commonly done in such a way that the data connection is established with a dynamic IP address from the airtime provider.

To request a static IP (if subscribed to) from the APN you must type in the user name and password from your airtime subscription.
Note for MAC OS: User name and password are required. Use user name **void** and password **void**. This works for some ISPs. Contact your airtime provider for further information.

- For setups that have a check box for 'Enable LCP extensions', deselect this.

No further configuration is needed to make a Standard IP data connection to the Internet.

See the table below for information on how to configure specific services for your PPPoE connection.

If you need a certain service, you must type in a specified text string when asked for a service name. The following table shows the service names supported by the terminal.

Text to type in the Service Name field	Function
(Blank)	Initiates a Primary Standard Data connection (default)
XBB:BACKGROUND	Initiates a Primary Standard Data connection (Same as blank!)
XBB:<AT String>	This allows the PPPoE clients to enter a full AT context activation string. **Example:** XBB:AT+CGDCONT=1,ip,"bgan.inmarsat.com"

Using the IP handset

You can use the Thrane IP Handset as user interface for the SAILOR 150 FleetBroadband system as well as for making calls.

The IP handset has a dedicated menu for the SAILOR 150 FleetBroadband system. You find a list of the menu items available in *The IP handset* on page 21.

For information on how to start up the IP handset, see *Connecting the Thrane IP handset* on page 13.

For further information on how to use the IP handset, refer to the IP Handset User Manual.

Using the web interface

In this chapter

This chapter describes how to use the web interface to operate, set up and configure your SAILOR 150 FleetBroadband system.

Introduction

The web interface

What is the web interface?

The web interface is built into the terminal and is used for operating, setting up and configuring the system.

You can access the web interface from a computer with a standard Internet browser.

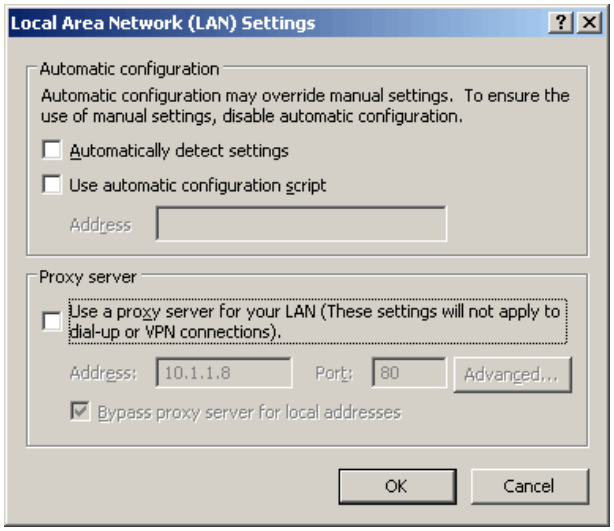
Proxy settings when accessing the web interface

If you are connecting your computer using a LAN or WLAN interface, the **Proxy server** settings in your browser must be disabled before accessing the web interface. Most browsers support disabling of the Proxy server settings for one specific IP address, so you can disable Proxy server settings for the web interface only, if you wish. Consult your browser help for information.

To disable the use of a Proxy server completely, do as follows:

Note The following description is for **Microsoft Internet Explorer**. If you are using a different browser, the procedure may be different.

1. In Microsoft Internet Explorer, select **Tools > Internet Options > Connections > LAN Settings**.


Local Area Network (LAN) Settings
Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.
Automatically detect settings
Use automatic configuration script
Address
Proxy server
Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).
Address: 10.1.1.8
Port: 80
Advanced...
Bypass proxy server for local addresses
OK
Cancel

2. Clear the box labeled **Use a proxy server for your LAN**.

3. Click **OK**.

When the proxy server settings are disabled, close your browser.

You may need to change this setting back on return to your Internet connection.

Accessing and navigating the web interface

Accessing the web interface

To access the web interface, do as follows:

1. Connect your computer to the terminal.

2. Start up the terminal.
   For details, see *Getting started* on page 10.

3. Open your browser and enter **http://ut.bgan** or the IP address of the terminal in the address bar.
   If your connected computer is set up to obtain a DNS server address automatically, this name is translated into the local IP address of the terminal. The default IP address of the terminal is **http://192.168.0.1**.

Note If the IP address is changed and you do not have the new address, you can temporarily set the IP address to the default value by pressing the **Reset** button next to the SIM slot in the connector panel of the terminal. You can then access the web interface and change the IP address.

Note that if you do not change the IP address, the default IP address will only be valid until the terminal is powered off. Then the terminal returns to the IP address from before the Reset button was pressed.

For further information on the Reset button, see *Reset button* on page 119.

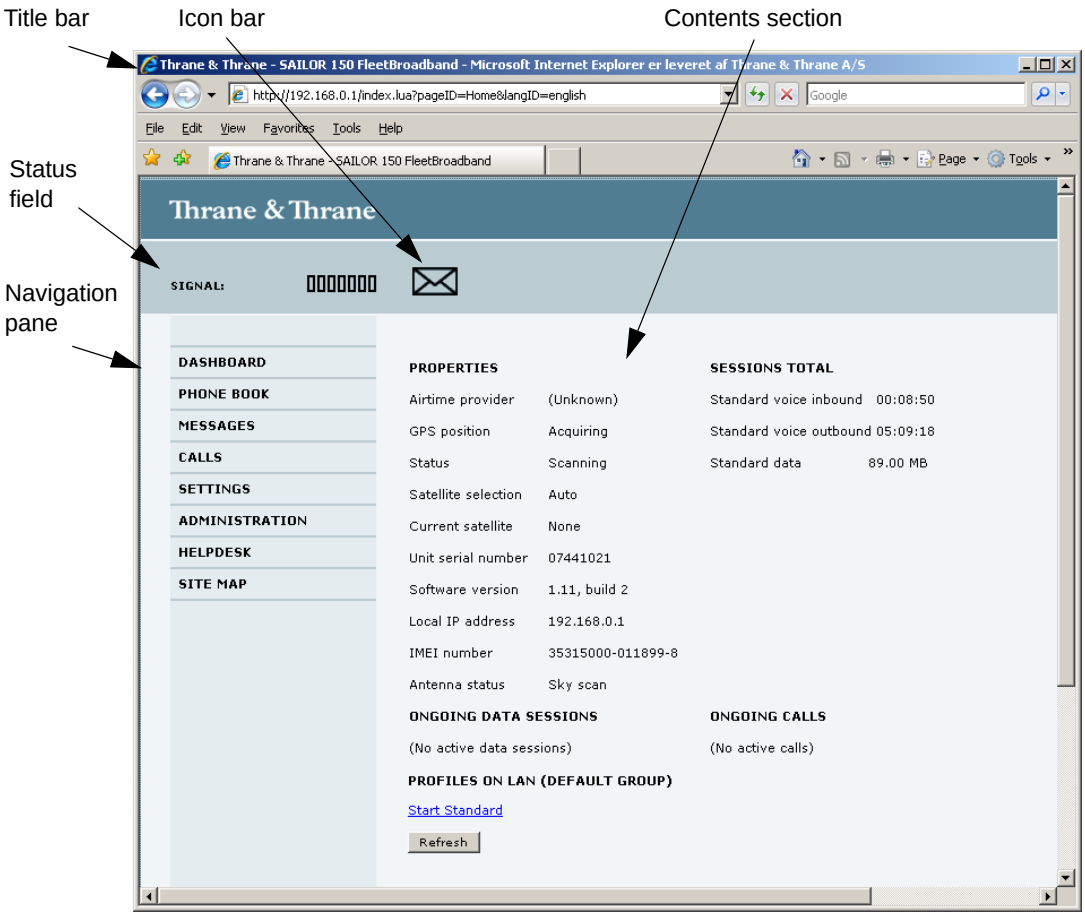
Changing the language

When you have access to the web interface, if you want to display a different language than English, select **SETTINGS > LANGUAGE** from the left menu, select a language from the list and click **Apply**. For further information, see *Selecting the language* on page 90.

Overview of the web interface

When the web interface opens, the title bar shows the name of the product.

The web interface consists of the following sections.



- The **navigation pane** holds the main menu. Clicking an item in the menu opens a submenu in the navigation pane or a new page in the contents section.
- The **status field** shows the signal strength.
- The **icon bar** shows icons for new SMS messages and for active events, when relevant. For explanations of the icons, see the next section, *Icons in the icon bar*.
- The **contents section** shows the page selected in the navigation pane. This section is used for viewing or changing settings, or for performing actions.

Icons in the icon bar

The following icons may appear in the icon bar in the web interface:

Icon	Explanation
	A new SMS message, or information of Voice mail, has arrived. Click the icon to see new messages or information of Voice mail. For further information, see *Receiving a message* on page 51.
	An event is active. Click the icon to see a list of active events. For explanations of the event messages, see *List of events* on page 111. Note that this icon will remain in the icon bar as long as the event is still active.

Navigating the web interface

- **To expand a menu**, click the menu in the navigation pane.
- **To access status and settings**, click the relevant subject in the navigation pane or click the relevant icon in the icon bar. The status or settings are displayed in the contents section.
- **To see the site map**, click **SITE MAP** in the navigation pane. The site map lists all topics and submenus. Click on items in the site map to go directly to the relevant location.

Entering the SIM PIN in the web interface

Do you need a SIM PIN?

Note You may not have to enter a SIM PIN to access the terminal. This depends on whether or not the use of a SIM PIN is enabled on your SIM card.

The administrator can enable and disable the use of a SIM PIN. For details, see *Setting up the use of SIM PIN in the terminal* on page 96.

If a computer is connected when you start up the terminal, you can access the web interface and enter the SIM PIN here.

To enter the SIM PIN

Note Using an Administrator user name and password you can change the PIN and enable or disable the use of a PIN. For further information, see *Setting up the use of SIM PIN in the terminal* on page 96.

If your SIM card requires a PIN, and the PIN has not yet been entered, you must enter it. When you access the web interface, it opens on the PIN page. Until you have entered the PIN you can only upload software and view the DASHBOARD. Access to all other parts of the web interface requires a PIN.

For information on how to enter the SIM PIN, see *Entering the SIM PIN using the web interface* on page 16.

When the correct PIN has been entered, the web interface opens the Dashboard and is ready for use.

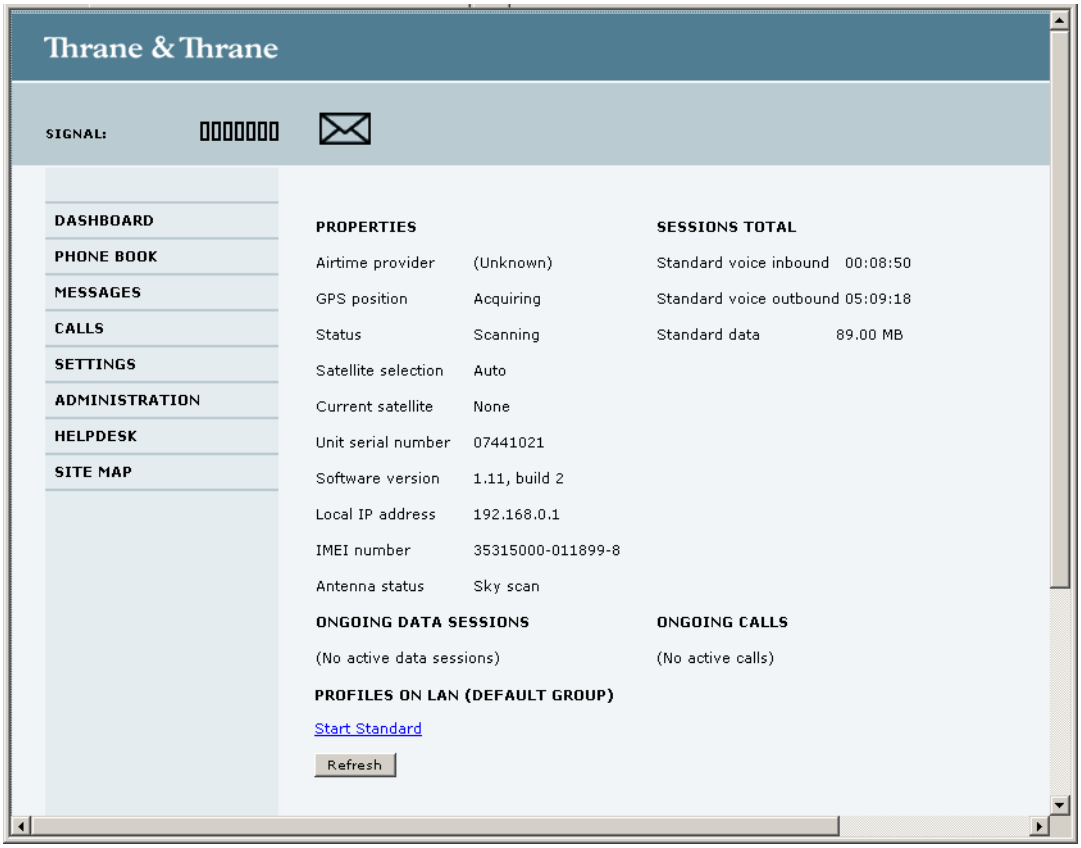
Note Some parts of the web interface may be greyed out if the user permissions are limited. For information on how to set up user permissions, see *Setting up user permissions* on page 98.

Using the Dashboard

Overview

The Dashboard is used for control and inspection of ongoing communication and for viewing properties and status of the terminal and antenna.

For information on how to start or stop your data sessions from the Dashboard, see *Connecting to the Internet* on page 29.



Properties

The **PROPERTIES** section of the **DASHBOARD** shows the following information:

- **Airtime provider.** The name of your Airtime Provider.
- **GPS position.** The GPS position of your SAILOR 150 FleetBroadband system.

  Note In some cases, the BGAN network does not allow the position to be displayed to the user. If this is the case, the display may just show **GPS acquired**. This means that the GPS position is received, but not shown.

  This also applies if the SAILOR FleetBroadband is not yet registered on the BGAN network, but the GPS position is received.

- **Status**. The status of the SAILOR 150 FleetBroadband system.
  The status can be one of the following:
  - **Scanning.** The terminal has instructed the antenna to scan for a BGAN signal. (The antenna status will show “Sky scan”)
  - **Searching**. The antenna has found a BGAN signal and the terminal is searching for a BGAN network in order to perform a registration. (The antenna status will show “Tracking”)
  - **Registering**. The terminal is attempting to register with the Satellite Access Station (SAS).
  - **Ready**. The terminal has registered and attached to the SAS and is ready to accept a service request (a call or a data session).
  - **Data active**. The terminal has established a call or a data session through the BGAN network.
  - **No GPS fix**. The GPS receiver has not yet achieved position fix. It may take some time to achieve GPS fix depending on a number of conditions. First of all, the antenna should have an unblocked view to as much of the sky as possible.
    The terminal will not be able to register with the SAS without a GPS fix.
  - **Not registered**. The terminal has not been able to register with the BGAN network.
- **Satellite selection**. The satellite selected for logon. For further information, see *Selecting the preferred BGAN satellite* on page 89.
- **Current satellite**. The satellite to which the system is currently logged on.
- **Unit serial number**. The serial number of the terminal.
- **Software version**. The version of the software embedded in the terminal.
- **Local IP address**. The local IP address of the terminal. This is the IP address used to access the terminal from a device connected to the terminal.
- **IMEI number**. The IMEI number (International Mobile Equipment Identity) of the terminal. This is a unique number that identifies your terminal.
- **Antenna status**. The status of the antenna.
  The antenna status can be:
  - **Sky scan**. The antenna is searching for the BGAN signal.
  - **Tracking**. The antenna has found and locked to the BGAN signal. The antenna is now tracking the BGAN signal.
  - **No antenna**. No known antenna is detected by the terminal.

Viewing information on calls and data sessions

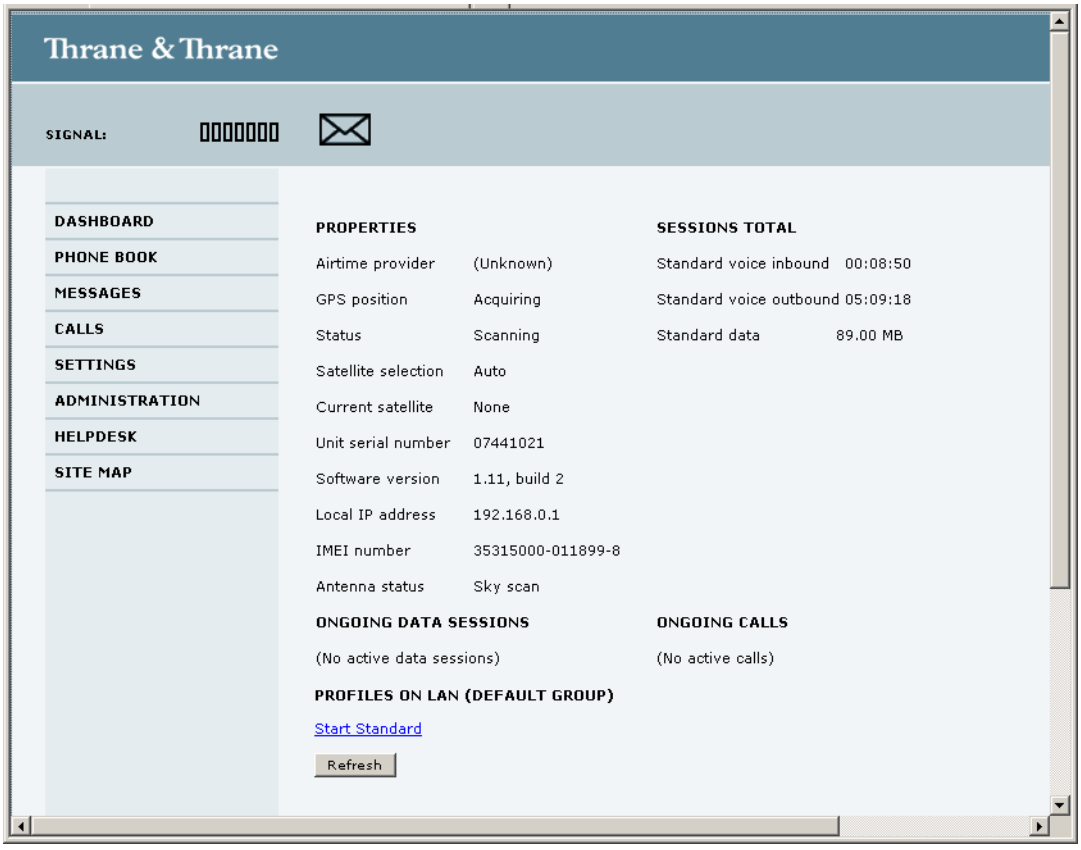
The following sections in the **Dashboard** show information on calls and data sessions.

Note The counters for calls and data sessions are only intended as a guide and cannot be used for direct comparison with your airtime bill.

- **ONGOING CALLS** is a list of calls that are currently active. The list shows the call type and the time connected for each call.
- **ONGOING DATA SESSIONS** is a list of data profiles that are currently active, including the IP address that is assigned to each profile.
- **SESSIONS TOTAL** lists the totals for each connection. The list shows the time connected (hh:mm:ss) for voice, and MB transferred for Standard data.

The counters show totals for connections since the counters were last cleared. For information on how to clear the counters, see *Log handling* on page 95.

Note If power to the terminal is interrupted unintentionally, the totals may be slightly inaccurate at next startup.



Using the phone book

General usage

Overview

In the phone book you can:

- Look up phone numbers.
- Look up short-dial numbers for easy dialing from a handset.
- Modify or delete existing names and phone numbers, or add new names and phone numbers.

Note If you are using a Thrane IP handset with the terminal, the contacts from this terminal phone book are included (read only) in your handset phone book.

Accessing the phone book

To access the phone book, select **PHONE BOOK** from the left navigation pane.

The phone book shows all entries with entry number, name and phone number. Empty place holders are also included.

To sort the phone book, click the title of the column you wish to sort by. For example, to sort by the names in the phone book alphabetically, click on **Name** in the top row of the phone book.

The phone book holds 199 entries divided into subpages. To select the subpages you want, click the relevant link at the bottom of the page.

Short dial

The entry number in the phone book is the Short dial number. When making a call from the terminal you can use this number instead of dialing the entire phone number.

Simply dial **00 <short dial>** followed by **#** or off-hook key.

Example: To call the third entry in the phone book from an analog phone, take the phone off hook and dial **003 #**.

Editing phone book entries

Adding a new entry

To add a new entry, do as follows:

1. In the phone book, locate the empty entry number where you want to add the new phone number and click **New**.

2. Type in the name and phone number of the new entry and click **Save entry**.
   The new name and number are now listed at the specified entry number in the phone book.

Modifying an entry in the phone book

To modify an entry, do as follows:

1. In the phone book, click **Edit** next to the entry you want to modify.

2. Modify the name or number as wanted and click **Save entry**.
   The name and/or number in the selected entry is now replaced with the new information.

Deleting an entry in the phone book

To delete an entry, click **Delete** next to the entry you want to delete.

Deleting all entries in the phone book

To delete all the entries in the phone book, click **Delete all entries in phone book** at the bottom of the **PHONE BOOK** page.

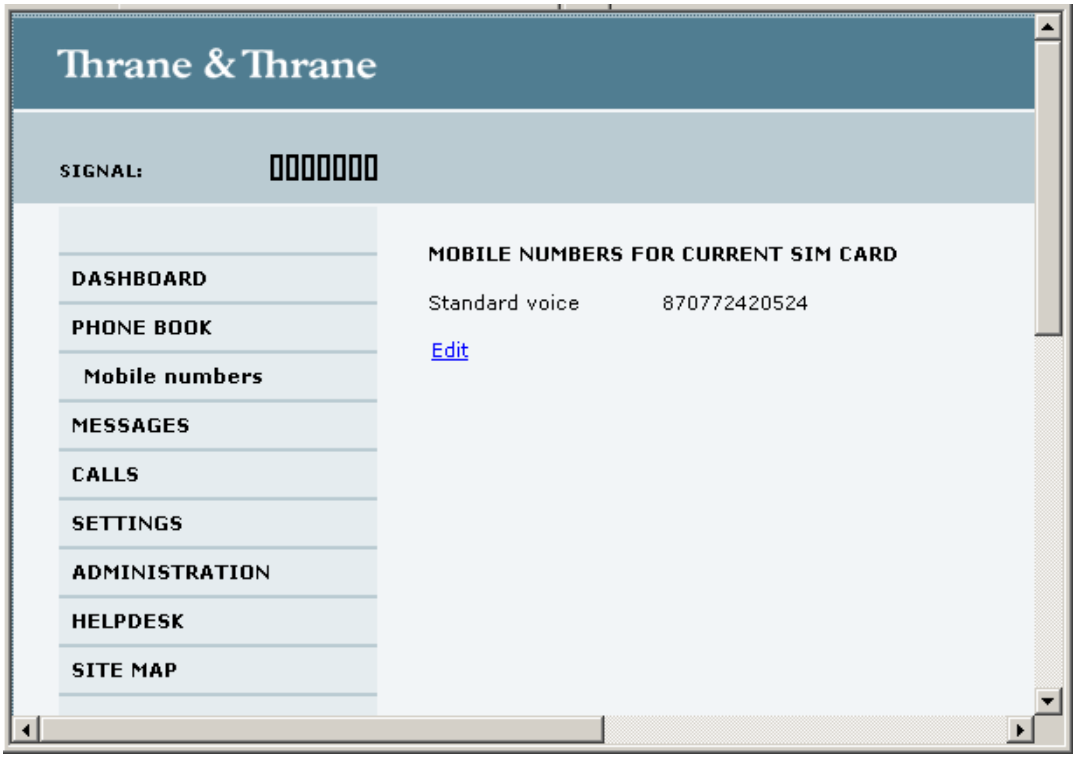
Viewing and editing the mobile number

The mobile number is the phone number to use when making a call to the terminal.

To view the mobile number

To view the mobile number of the terminal, select **PHONE BOOK > Mobile numbers** from the left navigation pane.

Note This number is not listed at delivery. The user must enter the number received from the Airtime Provider.



To enter or edit the mobile number

To enter or edit the mobile number, click **Edit** at the bottom of the page, type in the number received from your Airtime Provider and click **OK**.

Using the Call log

Information on total usage

To enter the CALLS page select **CALLS** from the left navigation pane. This page contains information on usage for circuit-switched connections.

Exporting the call log

You can export the call log file and save it on your computer for archiving, surveillance or other tracking purposes.

The call log holds information on all calls and data sessions since the call log was last cleared. For information on how to view the lists of calls and data sessions, see the next section.

To export the entire call log to a file, do as follows:

1. In the **CALLS** page, click the link **Export call log to file**.
2. Browse to the location where you want to save the log.
3. Click **OK**.

Viewing the lists of calls and data sessions

To see information on outgoing, received or missed calls or data sessions, select one of the following lists from the left navigation pane in the **CALLS** page:

- **Outgoing calls** shows the start time, receiving end phone number, duration, type and estimated charge of each outgoing call.
- **Received calls** shows the start time, calling phone number, duration and type of each incoming call.
- **Missed calls** shows the start time, calling phone number and type of each incoming call that was not received.
- **Standard data sessions** shows the start time, bytes in, bytes out and estimated charge of each Standard IP session.

Date and time is the international UTC time, received from the satellite.

For information on the available types of service, see *The BGAN services supported by SAILOR®150 FleetBroadband* on page 7.

Note The estimated charge is based on your entries under ADMINISTRATION > Call charges. Thrane & Thrane does not take responsibility for the correctness of this estimated charge.

You can sort each of the lists by clicking the title of the column you wish to sort by.

If a list covers more than one page, you can click the relevant link at the bottom of the page, to go to another page.

When there are more than 100 calls in the total list, the oldest calls are automatically removed to make room for new calls.

Handling SMS messages

Sending an SMS message

Important

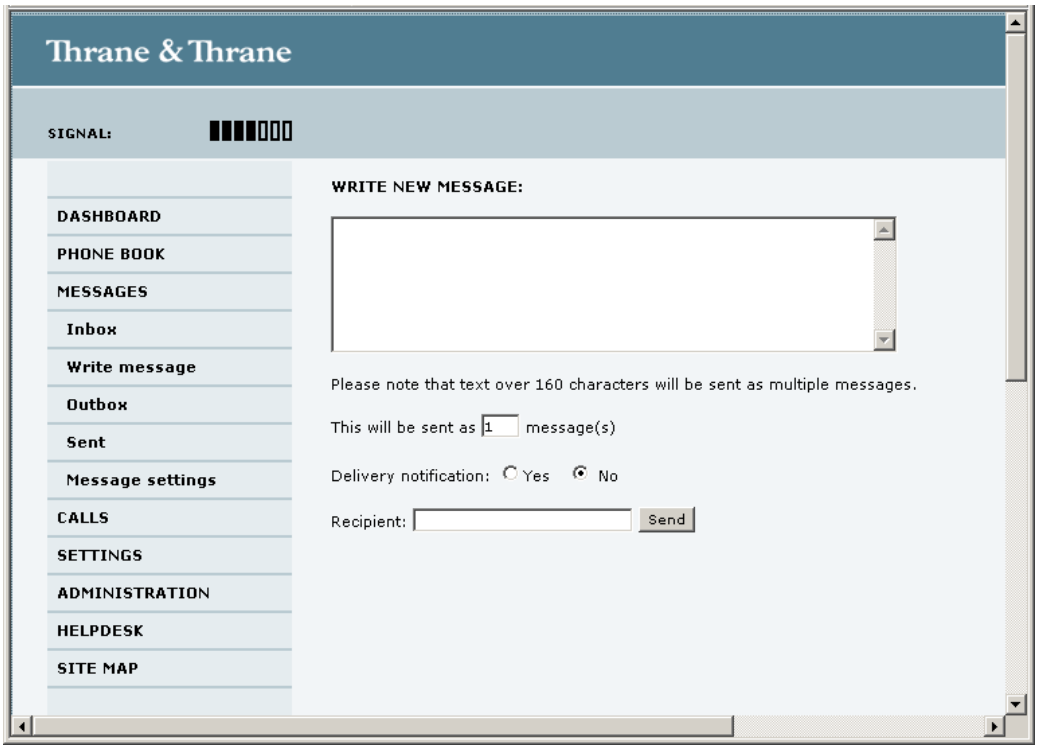
If the terminal is not online when you attempt to send a message, the message is moved to the Outbox instead of the Sent folder. Messages in the Outbox are **not** automatically sent when the terminal goes online. For further information on the Outbox, see the next section, *Options for messages in the Outbox*.

To make sure a message has been sent, check that it has been moved to the Sent folder.

To send an SMS message **from** the terminal, do as follows:

1. Click **MESSAGES** from the left navigation pane.
   This page contains new incoming messages.

2. In the left navigation pane, click **Write message**.



3. Type in the message in the **Write new message** field.
   If the message text is too long for one SMS, the message is sent as two or more SMS messages. The field below the message field shows the number of SMS messages used to send the message.

4. Type in the phone number in the **Recipient** field.
   Remember **00** and **country code** (e.g. **00 45** for Denmark or **00 1** for USA).

5. Select whether or not you want **Delivery notification** for this SMS message.
   If you click Yes, the Status column in the Sent folder will show the status of your message when it has been sent.
   You can set up delivery notification generally for all SMS messages. This setting is used by default when you send a message. For further information, see *Configuring message settings* on page 53.

6. Click **Send**.
   The message is now sent and moved to the Sent folder.

Options for messages in the Outbox

Messages in the Outbox are messages that have not been sent, e.g. because the terminal was not online when you attempted to send the messages.

To access the Outbox, click **MESSAGES** > **Outbox** from the navigation pane.

You have the following options for messages in the Outbox:

- When the terminal is online, click **Resend** next to the message you want to send. When the **Write message** page opens, click **Send**.
  The terminal now attempts to send the message again. To make sure the message has been sent, look in the Sent folder.
- Click **Delete** next to a message to delete it.
- Click **Delete all messages in Outbox** to delete all the messages.

Options for messages in the Sent folder

The Sent folder contains SMS messages that have been sent.

To access the Sent folder, select **MESSAGES** > **Sent** from the navigation pane.

The Status column shows the status of each message, if you have selected Delivery notification when sending the message.

From the Sent folder you have the following options:

- Click **Resend** next to a message you want to send again.
  When the Write message page opens, click **Send**.
  The terminal now attempts to send the message again. To make sure the message has been sent, look in the Sent folder. There should now be two copies of the sent message.
- Click **Forward** next to a message you want to forward.
  Type in the phone number of the new recipient and click **Send**.
  The terminal now attempts to send the message to the new recipient. To make sure the message has been sent, look in the Sent folder.
- Click **Delete** next to a message to delete it.
- Click **Delete all sent messages** to delete all the messages.

Sending an SMS message to the terminal

You can send an SMS message to the terminal e.g. from a mobile phone, using the mobile number for the terminal. Dial

+ <Mobile number>

The first part of the mobile number is always 870, which is the “country code” for the BGAN system. If the mobile number is listed in the web interface, you can look it up as follows:

Select **PHONE BOOK > Mobile numbers**. If the mobile number is not listed in the web interface, refer to the documents provided with your airtime subscription.

Receiving a message

If a message has arrived, the icon bar at the top of the web interface shows an unopened envelope. Click the envelope to see the new message(s).

Otherwise, to see new messages click **MESSAGES** from the left navigation pane.

The page shows new incoming messages.

Note The terminal does not accept more than 100 incoming messages (including read and unread messages). If you have received 100 messages, you have to delete some of them in order to free space for new messages. Otherwise, the new messages are rejected.

If the message is not an SMS message but information of voice mail, call your Voice mail service number to hear the Voice mail. The Voice mail service number is normally listed in the SMS message.

You may also find the Voice mail service number under **MESSAGES** > **Message settings**. Note that the voice mail number is only shown here if it is available on the SIM card. Otherwise, refer to the information included with your Airtime subscription.

Options for new SMS messages

To see new messages, click **MESSAGES** from the left navigation pane.

Besides viewing the new messages, you have a number of options for what to do with each message:

- Click **Archive** to move it to your Inbox containing read messages.
- Click **Reply** to reply to a message.
  Then type in your reply and click **Send**.
  For information on how to include the original message in your reply, see *Setting up the default message options* on page 53.
- Click **Forward** to forward a message to someone.
  Then type in the phone number in the **Recipient** field and click **Send**.
- If you want to move all the new messages, click **Move all new messages to Inbox**.

Note | New messages cannot be deleted until they have been moved to the Inbox.

Options for SMS messages in the Inbox

The messages in the Inbox are the incoming messages that have been read and moved from the list of new messages (refer to the previous section).

From the Inbox, you have the following options:

- Click **Reply** to reply to a message.
  Then type in your reply and click **Send**.
  For information on how to include the original message in your reply, see *Setting up the default message options* on page 53.
- Click **Forward** to forward a message to someone.
  Then type in the phone number in the **Recipient** field and click **Send**.
- Click **Delete** to delete the message.
- Click **Delete all messages in Inbox** to delete all read messages in the Inbox.

Configuring message settings

Setting up the default message options

You can set up general options for your outgoing messages. These settings apply by default to all your outgoing messages. Note, however, that you can change the Delivery notification setting for an individual message. For further information, see *Sending an SMS message* on page 49.

Do as follows:

1. Select **MESSAGES** > **Message settings** from the left navigation pane.

2. If you want to include the original message when you reply, select **Yes** next to **Include message in reply**.

3. Select whether or not you want **Delivery notification** for SMS messages.
   If you click Yes, the Status column in the Sent folder will show the status of your message when it has been sent.

4. Click **Apply**.

Viewing or changing SMS service center number

The SMS service center number identifies the SMS service center used when sending and receiving SMS messages. The SMS service center number is stored on the SIM card.

- To see the SMS service center number, select **MESSAGES** > **Message settings** from the left navigation pane.
- To change the number, click **Edit** next to **SMS service center**, change the number and click **Save**. Then click **Apply** to apply all changes in the page.

The SMS service center number is provided from your Airtime Provider.

Viewing the Voice mail number

You get an SMS notification in the web interface when you have received Voice mail. The Voice mail number is the number you call to hear your incoming voice mail.

Note The Voice mail number is only listed if it is available on the SIM card. Otherwise, refer to the information included with your Airtime subscription.

To see the Voice mail number, select **MESSAGES** > **Message settings** from the left navigation pane. The **Voice mail number** field shows the Voice mail number.

Setting up the interfaces

The SETTINGS page (Antenna properties)

The **SETTINGS** page shows properties of the connected antenna.

To access the SETTINGS page, select SETTINGS from the left navigation pane.

Note If the HPA module in the antenna has been exchanged the **Antenna serial number** field shows "0". You can still see the antenna serial number on the label on the underneath of the antenna.

Configuring the LAN interface

Overview

The SAILOR 150 FleetBroadband terminal has 2 LAN connectors with PoE (Power over Ethernet).

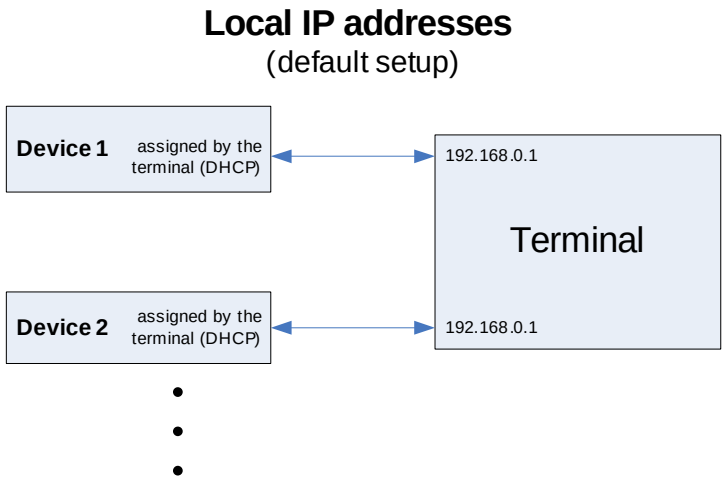
Some of the LAN parameters are set up in the network management pages, which require administrator password.

CAUTION! All connections to the LAN interface may be affected when you change the following settings. This also includes your own current connection to the web interface.

Setting up the local LAN IP addresses

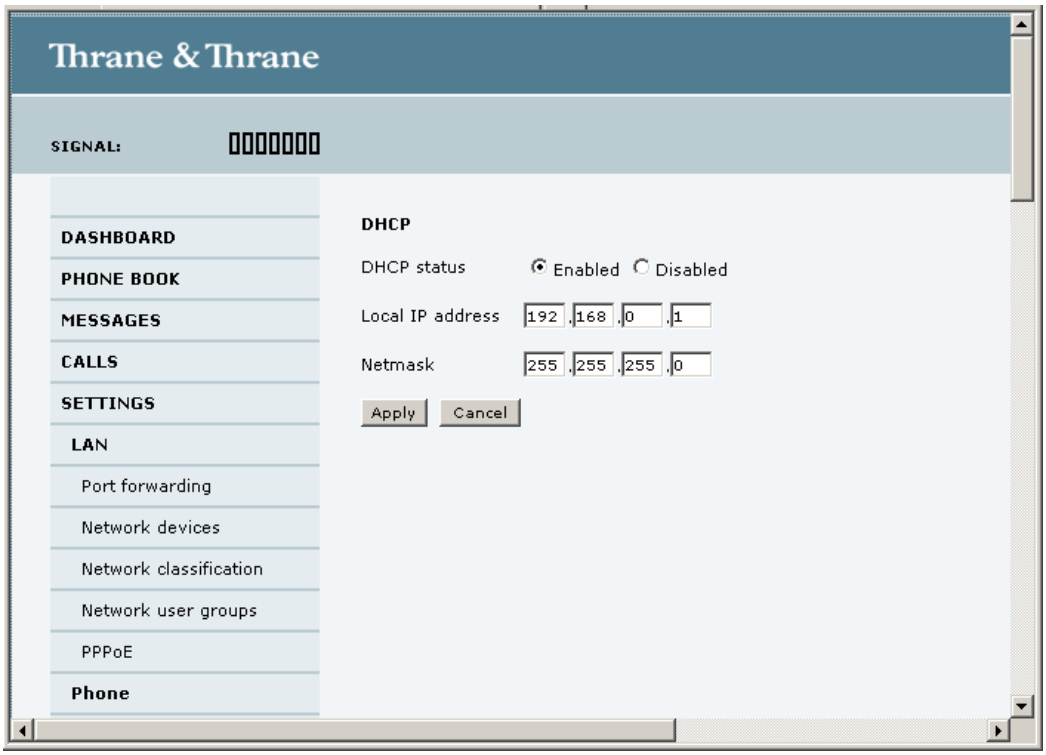
In the web interface you can set up the IP addressing between the terminal and devices connected to the terminal. The terminal has a built-in DHCP server which can be used to dynamically assign IP addresses to devices connected to the terminal.

You can also set up the local IP address used by the connected devices to access the terminal. The drawing below shows the default setup.



To change the local IP addresses, do as follows:

1. From the left navigation pane, select **SETTINGS > LAN**.



2. At **DHCP status**, select **Enabled** (recommended for most purposes), or **Disabled**.
   - If you select **Enabled**, the terminal assigns dynamic IP addresses to devices connected to the terminal.
   - If you select **Disabled**, you need to set up a static IP address in the connected device.

   Note A number of IP subnets cannot be used in connected devices because they are reserved for internal use in the terminal. See *List of reserved IP subnets* on page 120.

3. If you want to change the **Local IP address** and the **Netmask** of the terminal, type in the new address and netmask.
   The Local IP address is the IP address of the terminal. It is used for accessing the web interface. By default, the address is 192.168.0.1 and the netmask is 255.255.255.0.

4. Click **Apply**.

Port forwarding

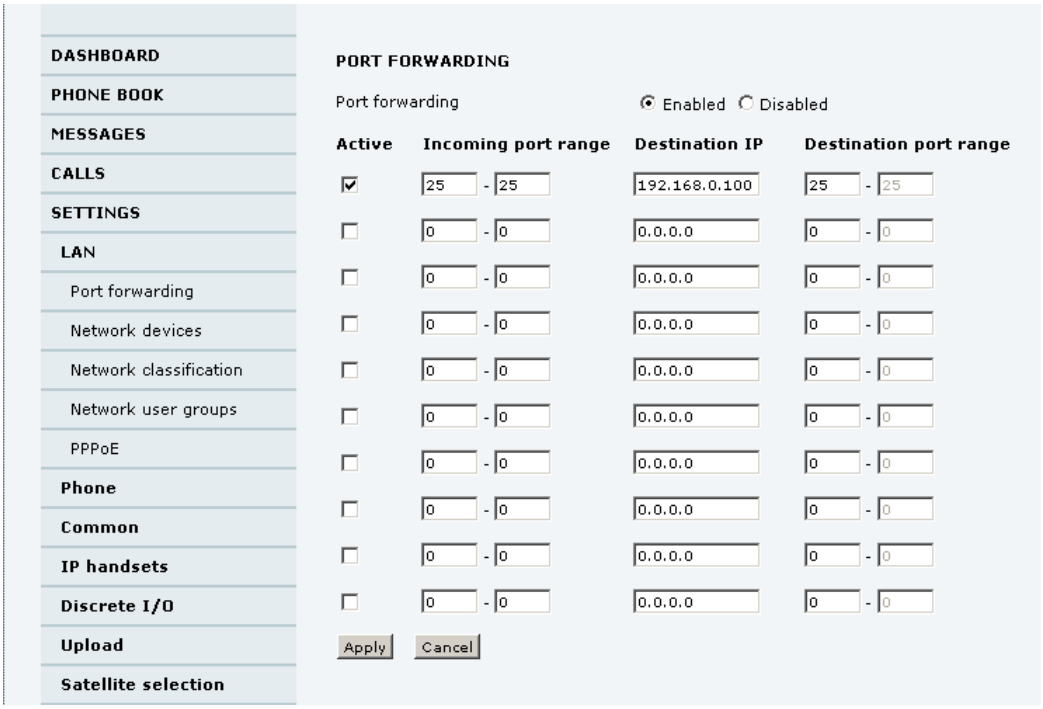
Port forwarding enables you to set up a server connected to the terminal while the terminal is in Router mode. Without port forwarding it would not be possible to contact the server from the Internet.

The terminal is normally in Router mode if you are using the Default network user group. We recommend using a static public IP address for the terminal in order to provide easy access to the terminal. For information on how to set up a static IP address, refer to step 5. on page 61 in the section *Setting up the Default network user group*.

The following example shows how to allow Internet access to a mail server (smtp) connected to the terminal.

The mail server in this example has the IP address 192.168.0.100.

1. Select **LAN > Port forwarding** in the left navigation pane.



2. Select **Enabled** to generally enable port forwarding.

3. Type in the **Incoming port range**.

4. Type in the **Destination IP** address, which in this example is the IP address of the mail server: 192.168.0.100.

5. Type in the **Destination port range**.

6. Repeat step 3. to step 5. to set up port forwarding to additional servers.

7. In the **Active** column, select which ports should have port forwarding activated.

8. Click **Apply**.

You can now access the mail server from the Internet, using the public IP address of the terminal.

If you do not know the IP address, you can look it up in the **DASHBOARD** of the web interface under **ONGOING DATA SESSIONS**.

Setting up the LAN network

Note For most purposes, the default setup is sufficient.

When you access the LAN network settings you are prompted for the Administrator user name and password.

Network user groups

Two network user groups are available to the users of the terminal:

- **The Default group**: By default, all users belong to the Default network user group, which provides a shared Standard connection to the Internet using the built-in router functionality of the terminal. This group does not allow Bridge mode.
- **Group 0**: A second group used for Bridge mode connection (Bridge mode is an exclusive connection, with NAT disabled in the terminal). With Group 0 the Internet connection is automatically established when the system is ready for transmission.
  If you want to have a direct Bridge mode connection use this network user group.

Necessary steps when managing network users

Managing your LAN network users includes the following steps:

1. **Defining a network user group.** See the next sections *Setting up a Bridge mode connection* or *Setting up the Default network user group*.
   The network user groups determine settings such as:
   - IP addressing (Static/Dynamic)
   - Internet access mode (Router Mode/Bridge Mode/No Internet Access)

2. **Identifying a network device.** See *Viewing network devices* on page 67.
   The network devices are identified by their IP address, MAC address and (optionally) device name.

3. **Associating the network user group and the network device.** See the next section *Setting up a Bridge mode connection*, step 13..
   The network classification table determines which devices should belong to which network user group. When a network device is connected, the terminal runs through the network classification table to check if the new connection matches any of the entries in the table. When a match is found, the terminal establishes a packet data connection (PDP context) with the settings defined in the belonging network user group, and the device is ready for use with the terminal.

Setting up the Default network user group

The Default network user group provides a shared Standard connection to the Internet using the built-in router functionality of the terminal.

If you want to apply other settings to the Default network user group, do as follows:

1. Select **SETTINGS > LAN > Network user groups**.

2. When you are prompted, enter the administrator user name and password.
   The default user name is **admin** and the default password is **1234**.

3. Click **Edit** next to the Default user group.

4. Select the type of **Internet connection**.

> **Note** The Default group **cannot** be set to Bridge mode. If you want to use Bridge mode you must use Group 0 (see the previous section).

- **Router mode** means the connection will be shared with other users, and the NAT module of the terminal will make the necessary address translations. Use this mode if one or more computers are connected using the LAN interface, and the terminal should act as a router.
- **No Internet access** means no connection to the Internet is allowed. Use this setting e.g. for the IP handset, where an Internet connection is not required. The external voice connection is still available; this setting only affects communication over the Internet.
  Also use this setting if you are going to use Group 0 to establish a Bridge mode connection.

5. Select **Dynamic IP address**.
   This is the IP address used externally on the satellite network. Refer to the next step for Static IP.

6. If you want to use a **static IP address**, you must have it included in your airtime subscription and use that address as follows:
   - Leave the setting in step 5. at **Dynamic**. Do **not** select Static IP.
   - Select **SIM default** in step 8.
   - Type in the APN user name and password from your provider in step 9.

   Your terminal will then use the static IP address set up for your SIM card.

   Note Static IP is handled by the service provider. **Do not type in a static IP address** in the Static IP address field; a manually typed IP address will currently not be used by the network.

7. Set **IP Header compression** to **Enabled** or **Disabled**.
   For information on IP Header compression, see *Header compression* on page 68.

8. Select the source of the **APN** (Access Point Name).
   There are four options for setting the APN. Unless you have special requirements, it is recommended to use the SIM default, or to set the common APN to SIM default, and then select Common here. You have the following options:
   - **Common**. The APN is taken from the Common APN defined under SETTINGS > Common. Refer to *Setting the common interface settings* on page 71.
   - **SIM default**. The APN is taken from the SIM card. If you want to use a static IP address on the external network, select this option either here or in the Common setting.
   - **Network assigned**. The APN is assigned from the network.
   - **User defined**. Type in the APN. APNs are provided from the Airtime Provider.

9. If your APN uses a password, type in the user name and password provided from the Airtime Provider.

   Note If you are going to use the static IP address from your SIM card, the user name and password are mandatory! See step 6. above.

10. At **Automatic activation** select whether the connection should be activated automatically or manually.
    - **Disabled** means you can activate/deactivate the connection from the Dashboard. This setting is used by default for the Default user group.
    - **Enabled** means the connection is activated automatically as soon as the system is ready.

11. Click **Apply**.

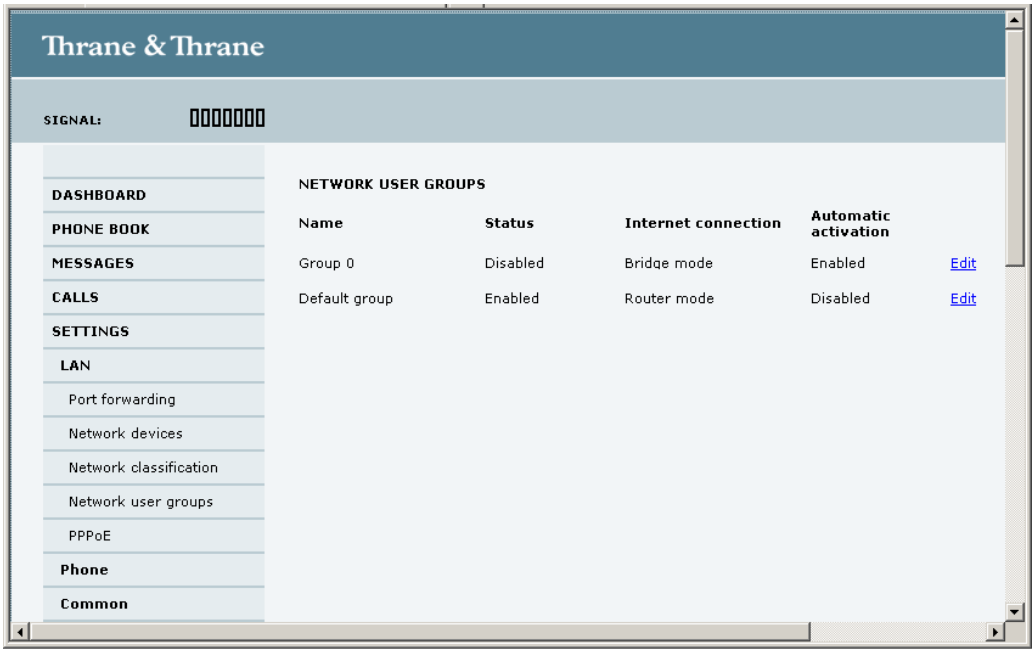
12. Reboot the terminal for the changes to take effect.

Setting up a Bridge mode connection

To set up a Bridge mode connection, do as follows:

1. Select **SETTINGS > LAN > Network user groups**.

2. When you are prompted, enter the administrator user name and password.
   The default user name is **admin** and the default password is **1234**.



3. Click **Edit** next to **Group 0**.

If you want, you can change the name of the group to something more meaningful, e.g. to "Bridge mode".

4. At **Status**, select **Enabled**.

5. Select **Dynamic IP address**.
   This is the IP address used externally on the satellite network. Refer to the next step for Static IP.

6. If you want to use a **static IP address**, you must have it included in your airtime subscription and use that address as follows:
   - Leave the setting in step 5. at **Dynamic, do not select Static IP**.
   - Select **SIM default** in step 8.
   - Type in the APN user name and password from your provider in step 9.

Your terminal will then use the static IP address set up for your SIM card.

Note Static IP is handled by the service provider. **Do not type in a static IP address** in the Static IP address field; a manually typed IP address will currently not be used by the network.

7. Set **IP Header compression** to **Enabled** or **Disabled**.
   For information on IP Header compression, see *Header compression* on page 68.

8. Select the source of the **APN** (Access Point Name).
   There are four options for setting the APN. Unless you have special requirements, it is recommended to use the SIM default, or to set the common APN to SIM default, and then select Common here. You have the following options:
   - **Common**. The APN is taken from the Common APN defined under SETTINGS > Common. Refer to *Setting the common interface settings* on page 71.
   - **SIM default**. The APN is taken from the SIM card. If you want to use a static IP address on the external network, select this option either here or in the Common setting.
   - **Network assigned**. The APN is assigned from the network.
   - **User defined**. Type in the APN. APNs are provided from the Airtime Provider.

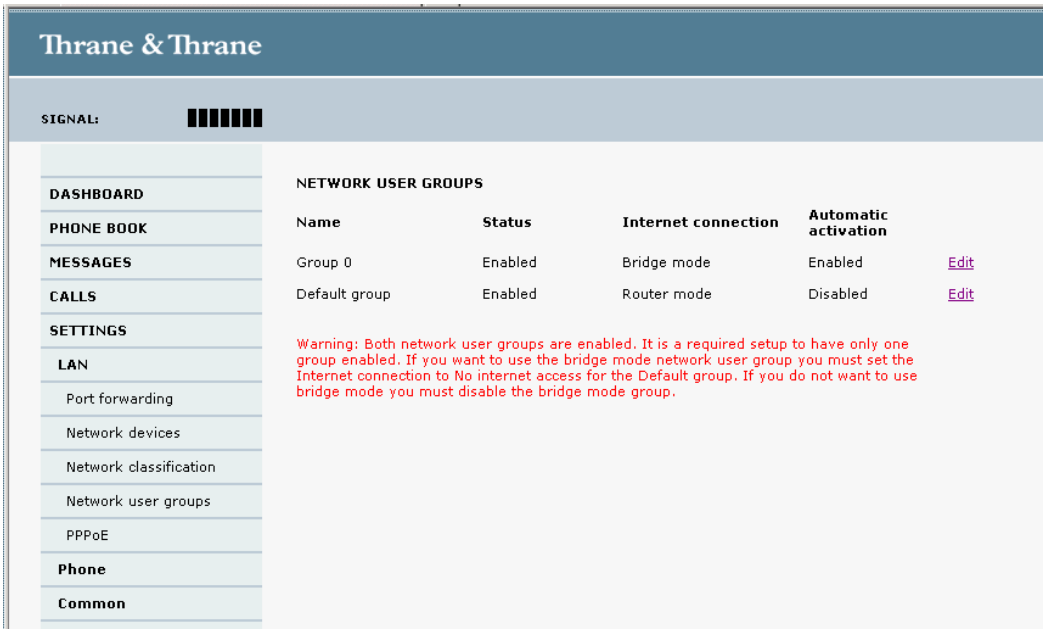
9. If your APN uses a password, type in the user name and password provided from the Airtime Provider.

   Note If you are going to use the static IP address from your SIM card, the user name and password are mandatory! See step 6. above.

10. At **Automatic activation** select whether the connection should be activated automatically or manually.
    - **Disabled** means you can activate/deactivate the connection from the Dashboard.
    - **Enabled** means the connection is activated automatically as soon as the system is ready. This setting is used by default for the Group 0 user group.

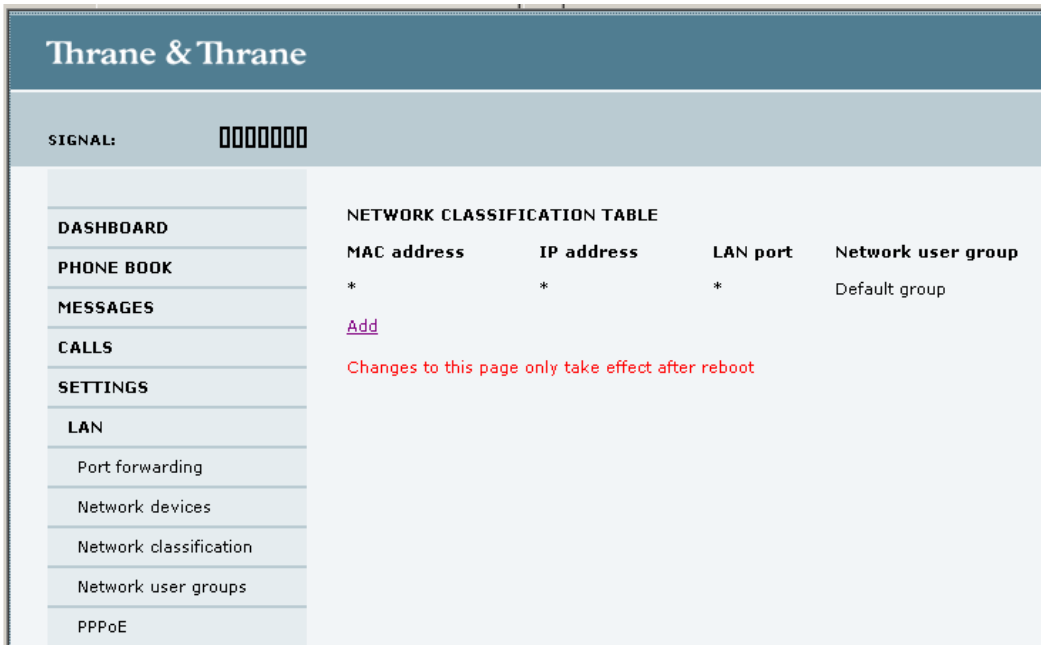
11. Click **Apply**.

Note | If both network user groups are enabled and both user groups have Internet access you will get a warning. Only one group can have Internet access.

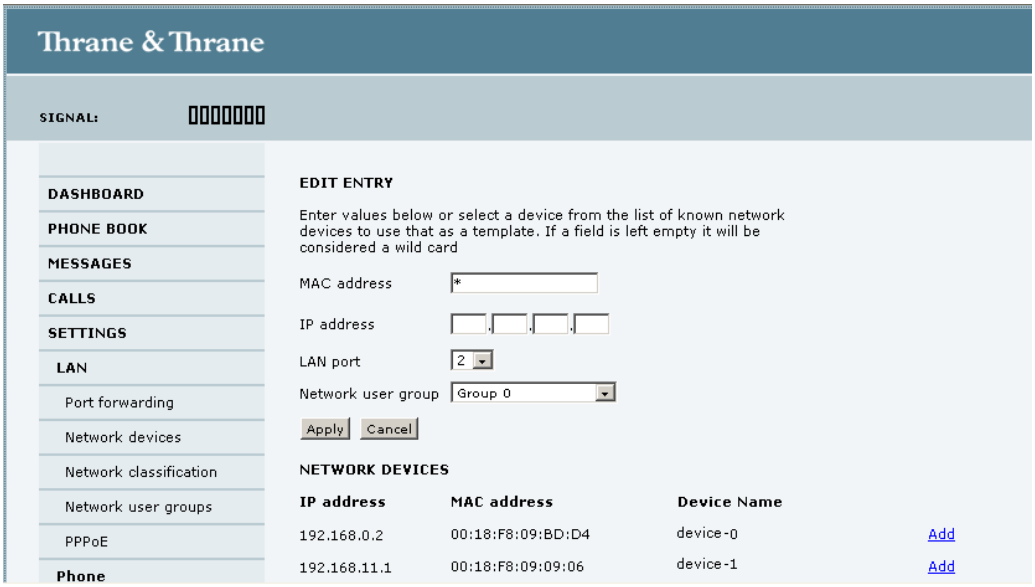


12. Follow the instructions in the warning and set the Default group to No Internet access, if you are going to use the Bridge mode connection.
For details on how to set up the Default group, see *Setting up the Default network user group* on page 60.

13. Select **SETTINGS > LAN > Network classification**.
The network classification table is used to define which network devices, IP addresses and/or LAN ports are associated with which network user groups.



14. Click **Add** to include Group 0 (Bridge mode) in the list.



15. Select or type in the parameters you want to associate with your Group 0.
    MAC address: If you want only a specific device (MAC address) to belong to Group 0, you can do one of the following:
    - If the device is or has been connected to the terminal, locate the device in the list at the bottom of the page and click **Add** next to the device.
    - Type in the MAC address in the MAC address field at the top of the page. An asterisk indicates a “wild card”, which means any MAC address is accepted.

    IP address: If you want a specific IP address to belong to Group 0, type in the IP address in the IP address field. If the field is left empty, any IP address is accepted.
    LAN port: If you want devices connected to a specific LAN port to belong to Group 0, select the port number to use.

16. Click **Apply**.
    Group 0 is now added to the network classification table.
    This means that when both network user groups are enabled, the terminal will first search for a device that matches the criteria set up in the network classification table for Group 0 and assign the Bridge mode connection to this device if possible. If no device matches these criteria, the Default network user group will be used. Note however that only one of the network user groups can have Internet access.

17. Reboot the terminal for the changes to take effect.

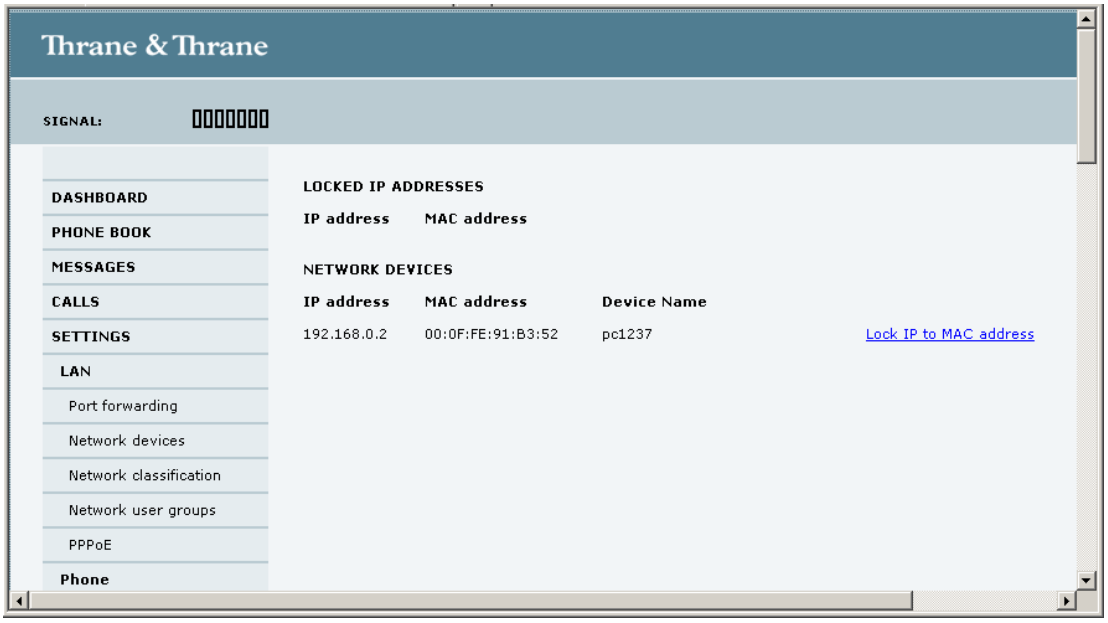
You should now be able to use your Bridge mode connection. By default, the connection is automatically activated when the terminal is ready and online, and a matching device is found.

Viewing network devices

All network devices that are or have been connected to the terminal are listed in the Network devices page.

To view the list of network devices, select **SETTINGS > LAN > Network devices**.

If you are prompted, enter the administrator user name and password. The default user name is **admin** and the default password is **1234**.



Locking an IP address to a MAC address

Note You can only lock an IP address to a MAC address if DHCP is enabled (see *Setting up the local LAN IP addresses* on page 56) and the Internet connection is not a Bridge mode connection.

When the device is locked to an IP address, the terminal will always assign this IP address to the MAC address of this device.

To lock a device to its current IP address, click the link next to the device.
The device is then locked to the current IP address and added to the list of locked IP addresses at the top of the page.

To unlock a device from the IP address, click **Delete** next to the device in the **LOCKED IP ADDRESSES** list.

Definitions for network terms

APN (Access Point Name)

APNs are provided from the Airtime Provider. They may also be defined on the SIM card
The APN is used by the network user to establish a connection to the required external network. This means that the terminal must know the APN in order to be able to connect to the external network.

Header compression

The Header of a data packet contains control information belonging to that packet. The information in the Header can take up a considerable amount of bandwidth. In order to save bandwidth, you can use Header Compression, meaning you compress the header information, leaving some of the information out.

You can select whether or not to use Header Compression for your data transmission.

NAT (Network Address Translation)

NAT enables a local-area network to use one set of private IP addresses for internal traffic and an assigned or static IP address for external traffic. The built-in NAT module in the terminal makes all necessary address translations between the local-area traffic and the external traffic.
If more than one user is connected, you must select a network user group with **Router mode** to use the NAT of the terminal.

Enabling PPPoE (Point-to-Point Protocol over Ethernet)

What is PPPoE

By using PPPoE, users can virtually “dial” from one machine to another over an Ethernet network, establish a point to point connection between them and then securely transport data packets over the connection.

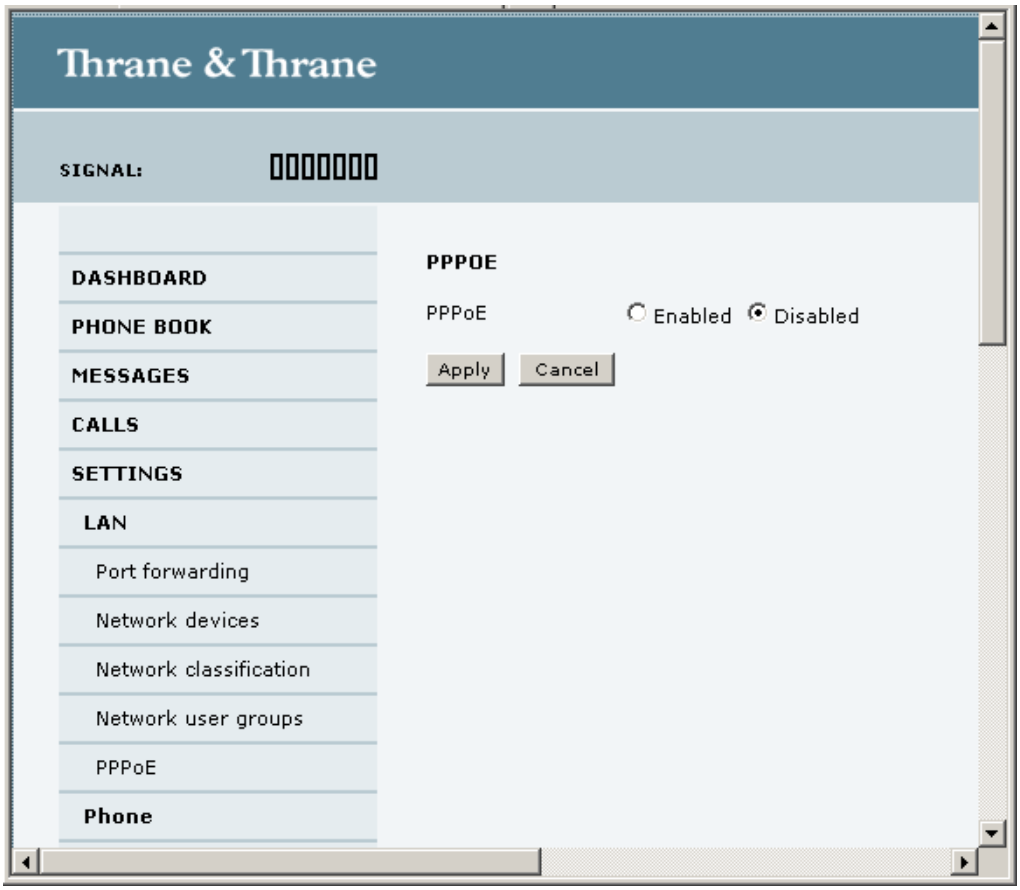
On the equipment connected to the SAILOR 150 FleetBroadband terminal you must enter a few settings for your PPPoE connection. For example you need to set up which service to use and possibly a user name and password. For details, refer to *Using PPPoE (Point-to-Point Protocol over Ethernet)* on page 32 and to the documentation for your connected equipment.

On the SAILOR 150 FleetBroadband terminal you must enable PPPoE before you can establish a PPPoE connection. Refer to the next section.

Enabling PPPoE in the SAILOR 150 FleetBroadband terminal

To enable PPPoE in the terminal do as follows:

1. Select **SETTINGS > LAN > PPPoE**.



2. Select **Enabled**.

3. Click **Apply**.

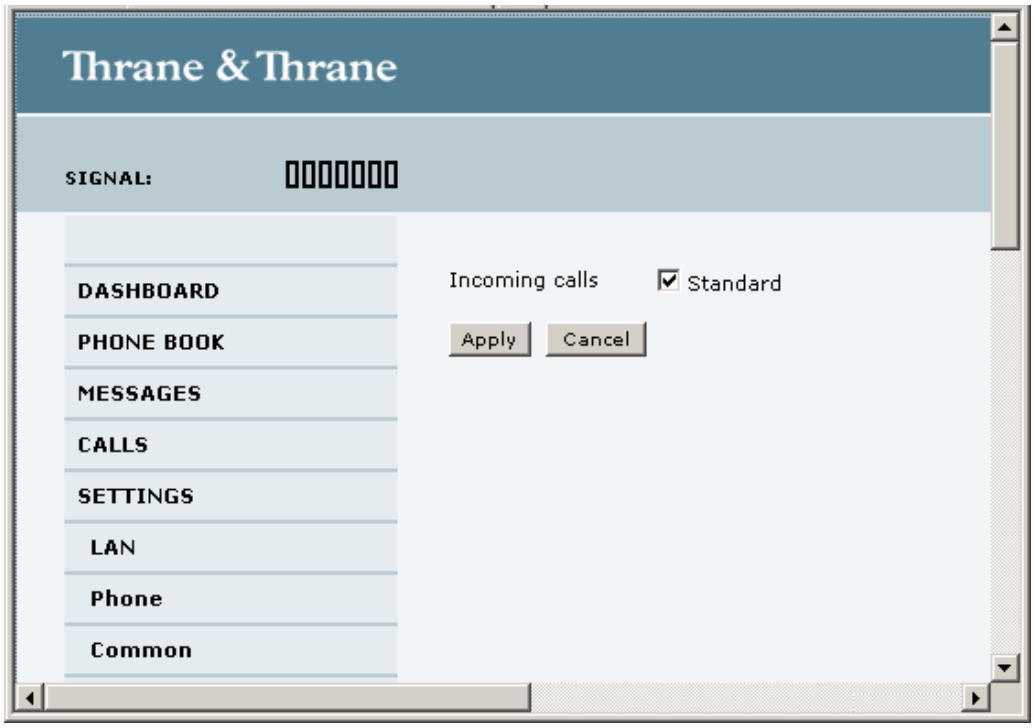
4. Restart the terminal for the setting to take effect.

For information on how to establish a connection with PPPoE, see *Using PPPoE (Point-to-Point Protocol over Ethernet)* on page 32.

Configuring the Phone interface

To enable/disable incoming calls on the Phone interface do as follows:

1. Select **SETTINGS** > **Phone** from the left navigation pane.



2. Select **Standard** if you want to be able to receive calls through the Phone interface.
   Only calls with Standard call type are accepted.
   If you clear the box you cannot receive calls through the Phone interface, but you can still use the Phone interface to make calls from the terminal.

3. Click **Apply**.

Setting the common interface settings

Overview

The settings under COMMON are common for all interfaces. Note, however, that in order to use the common Access Point Name for an interface, you must select **Common** for the APN setting when setting up the network user group.

Definition of Access Point Name (APN)

The APN is used by the network user to establish a connection to the required external network. This means that the terminal must know the APN in order to be able to connect to the external network.
APNs are provided from the Airtime Provider. They may also be defined on the SIM card.

How to use the common APN

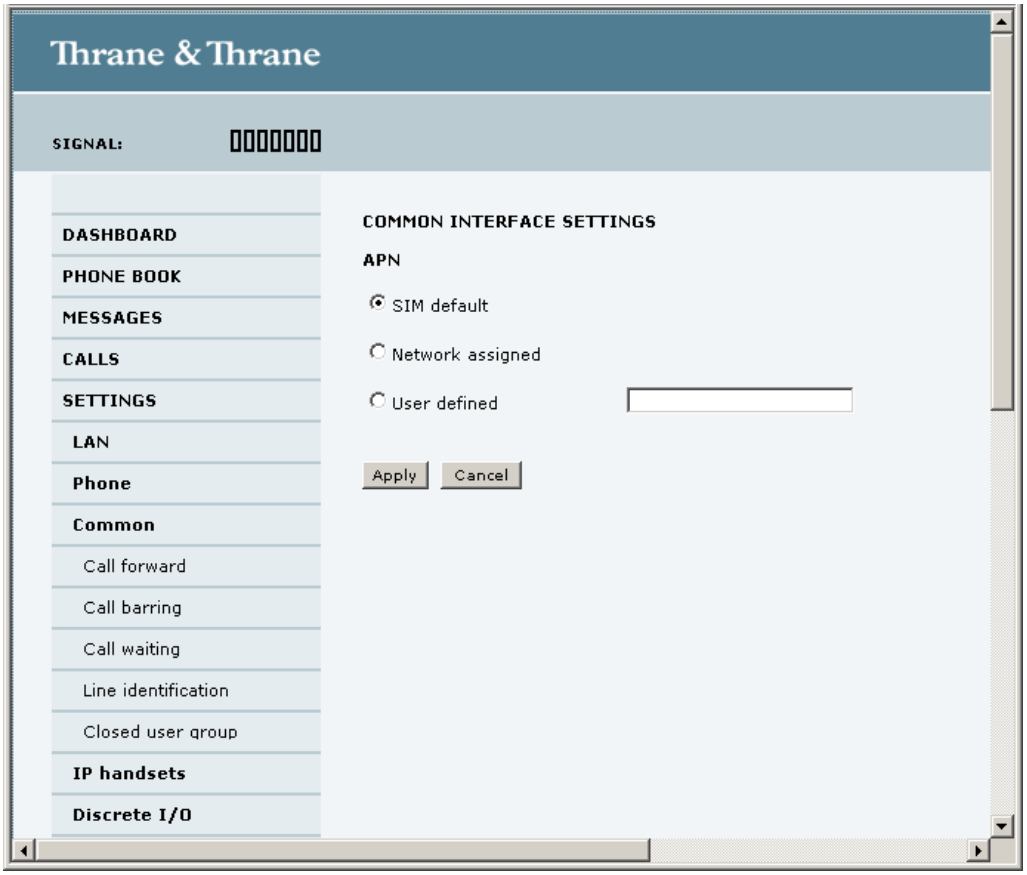
When you configure the APN for your individual network user group, select **Common** to use the setting from this page.

If you are using the same APN for both network user groups, it is easier to define it once under Common, and then simply select Common for the relevant network user groups. Also, if you change the common APN at a later stage, it is automatically updated for both network user groups where the Common setting is selected.

To set up the common interface settings

To set up the common interface settings, do as follows:

1. Select **SETTINGS** > **Common**.



2. Select the **APN**. You have the following options:
   - **SIM default**. The APN is taken from the SIM card. This is the recommended option, unless you have special requirements.
   - **Network assigned**. The APN is assigned from the network.
   - **User defined**. Type in the APN. APNs are provided from the Airtime Provider.

3. Click **Apply**.

Setting up call services

Overview

The setup of call services is also common for all interfaces.

Note The terminal must be registered on the BGAN network before you can set up the call services in the web interface.

In the web interface you can set up the following supplementary services:

- Call forwarding
- Call barring
- Call waiting
- Line identification
- Closed user group

Note that, depending on the network, some of these call service settings may prevent others from being activated.

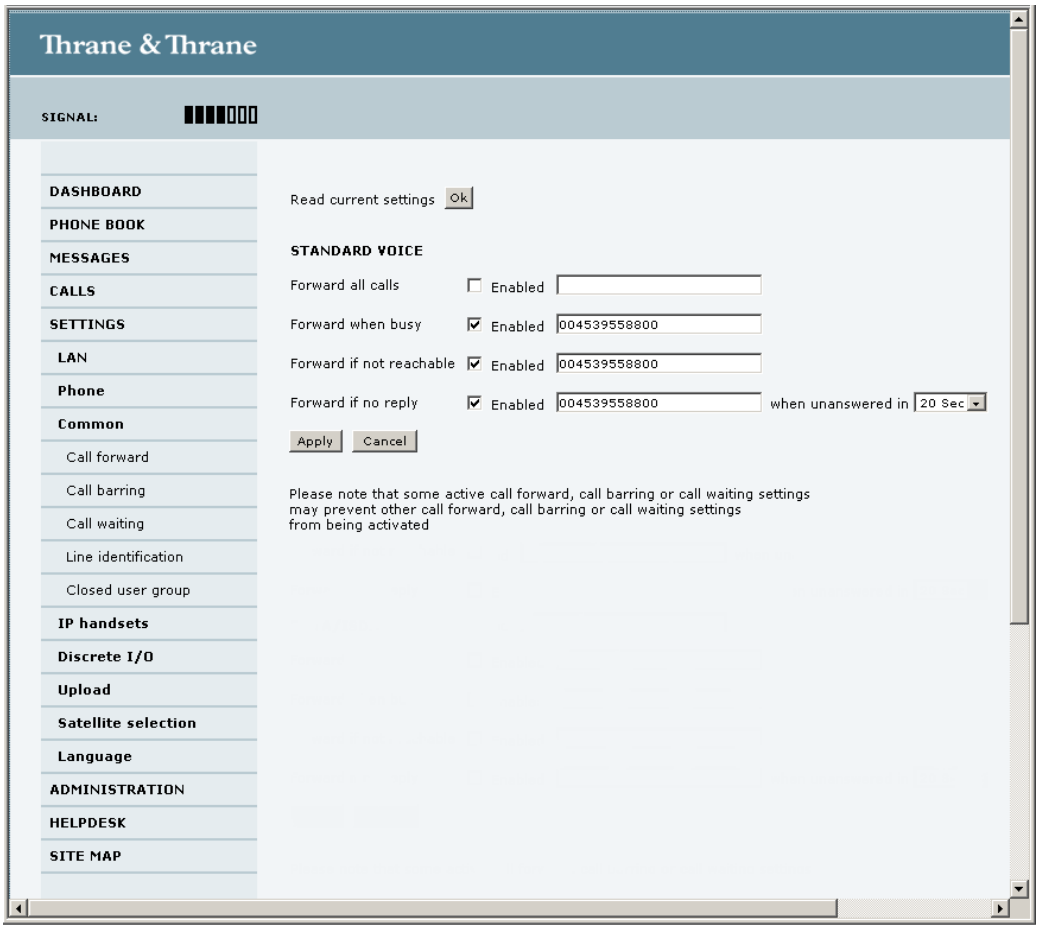
The settings apply for all connected devices using a circuit-switched service.

Call forwarding

You can set up the terminal to automatically forward incoming calls to another phone number. This information is saved in the BGAN network so it is available when the call cannot be put through and must be forwarded. This service is usually set up by the airtime provider.

Do as follows:

1. Select **SETTINGS > Common > Call forward** from the left navigation pane.



2. Click **OK** next to **Read current settings** to display the phone numbers for call forwarding for the subscription. These numbers are operator controlled and come with your airtime subscription (default). A message saying **Operation in progress, please wait** is displayed.

3. Select **Enabled** next to the situation(s) in which you want to forward incoming calls.

4. Next to the enabled items, you can type in the phone number you want to forward the call to.

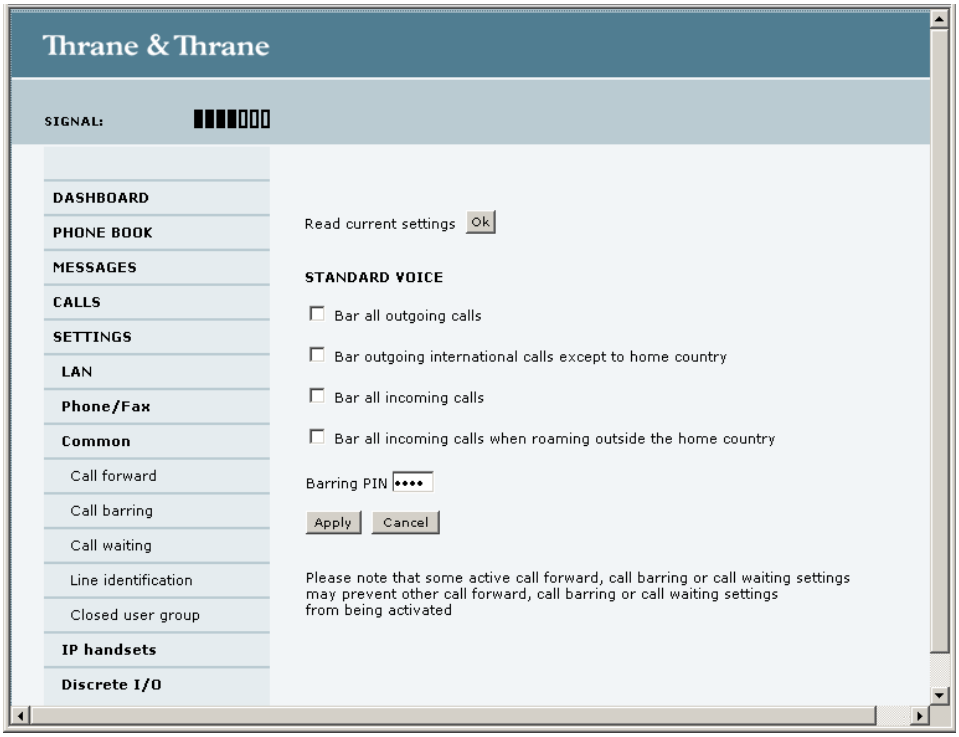
5. If you have selected **Forward if no reply**, select from the drop-down list the period of time the system should wait before forwarding the call.

6. Click **Apply**.

Call barring

Do as follows to bar incoming and/or outgoing calls to and from the terminal:

1. Select **SETTINGS > Common > Call barring** from the left navigation pane.



2. Click **OK** next to **Read current settings**, to make sure the page is updated.

3. Select which calls should be barred.

4. In the **Barring PIN** field, type in the PIN for your call barring setup.

> **Note** This is **not** the SIM PIN entered at startup, but a network PIN which is supplied together with your SIM PIN.

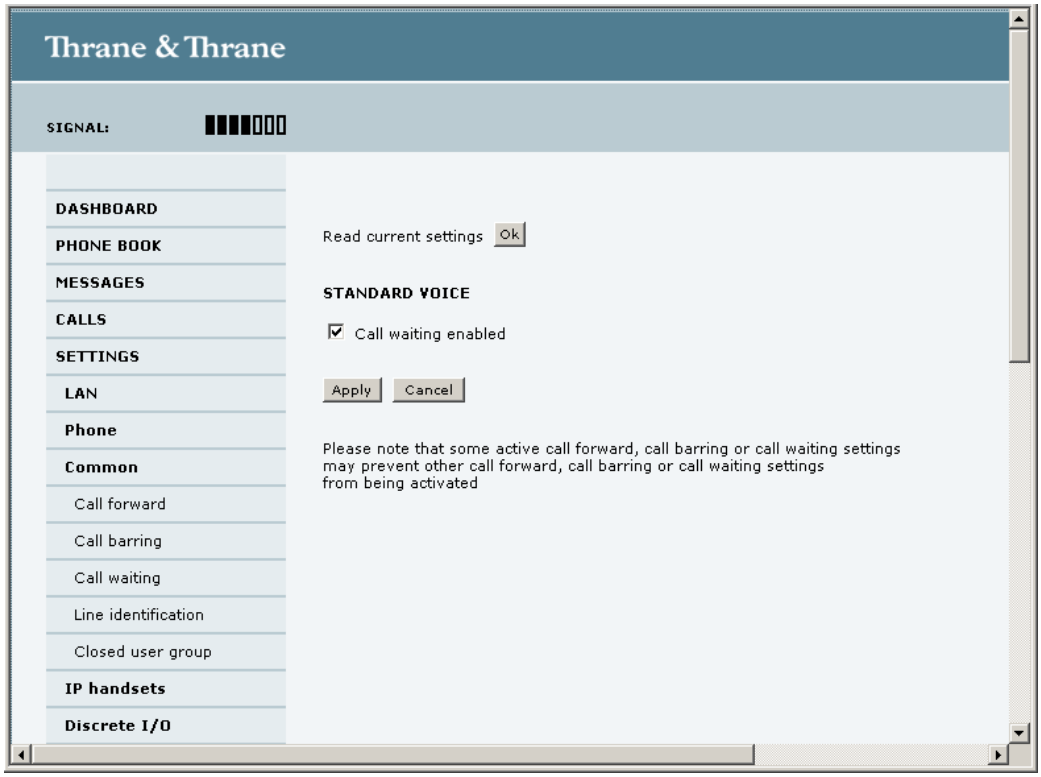
5. Click **Apply**.

Call waiting

You can set up whether or not you want to receive notification of waiting calls while you are making a call or transmitting data.

Do as follows:

1. Select **SETTINGS > Common > Call waiting** from the left navigation pane.



2. Click **OK** next to **Read current settings** to make sure the page is updated.

3. Select **Call waiting enabled** if you want to get notification of waiting calls while you are making a call or transmitting data.

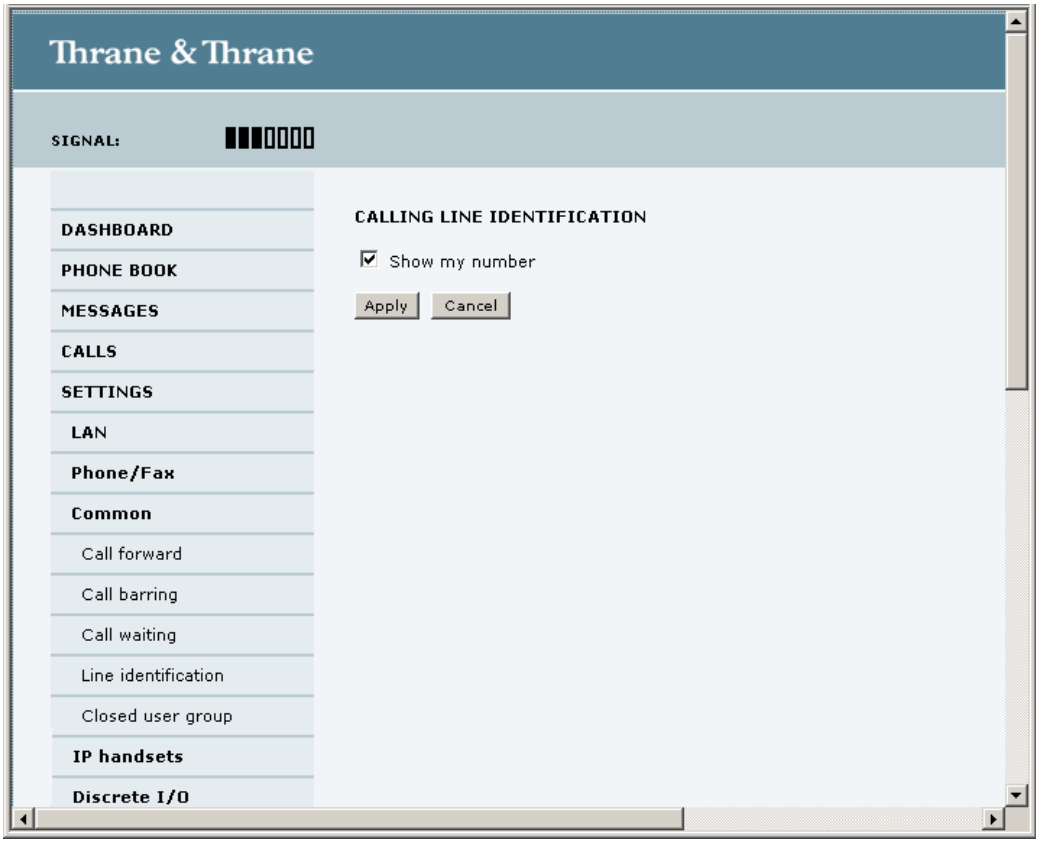
4. Click **Apply**.

Line identification

You can set up the terminal to show your number when you are making a call.

Do as follows:

1. Select **SETTINGS > Common > Line identification** from the left navigation pane.



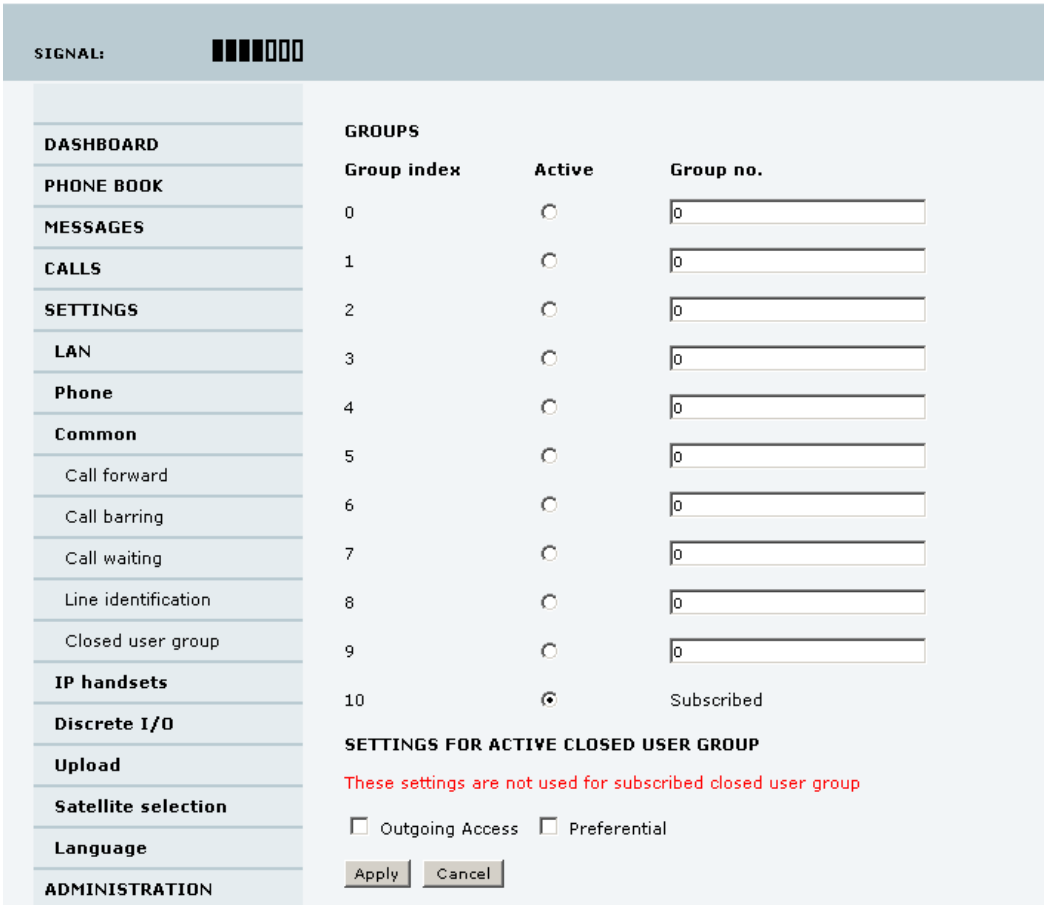
2. Select **Show my number** and click **Apply**.

Closed user group

Your subscription may include one or more closed user groups. A closed user group is a group of users permitted to make calls to each other but not to users outside the group.

To define the settings for these user groups, do as follows:

1. Select **SETTINGS > Common > Closed user group** from the left navigation pane.



2. Type in your user group number(s) under **Group no.**
   Your airtime subscription lists your user group number(s).

3. Select which group(s) should be active.
   If you select **Subscribed**, the group(s) included in your subscription will be active.

4. To allow outgoing access for the activated user group(s), select **Outgoing Access** under **SETTINGS FOR ACTIVE CLOSED USER GROUP**. Note that if you selected Subscribed above, this setting will not be used.

5. Select **Preferential** if you want the activated user group to be selected when a member of a user group does not specify the group number during call set up. Note that if you selected Subscribed above, this setting will not be used.

6. Click **Apply**.

Setting up the connection to the Thrane IP Handset

Overview

By default, the handset is automatically connected at startup, so no configuration is necessary!

The terminal is set up to assign the user name 0501 and the password 0501 to the Thrane IP Handset when it is connected.

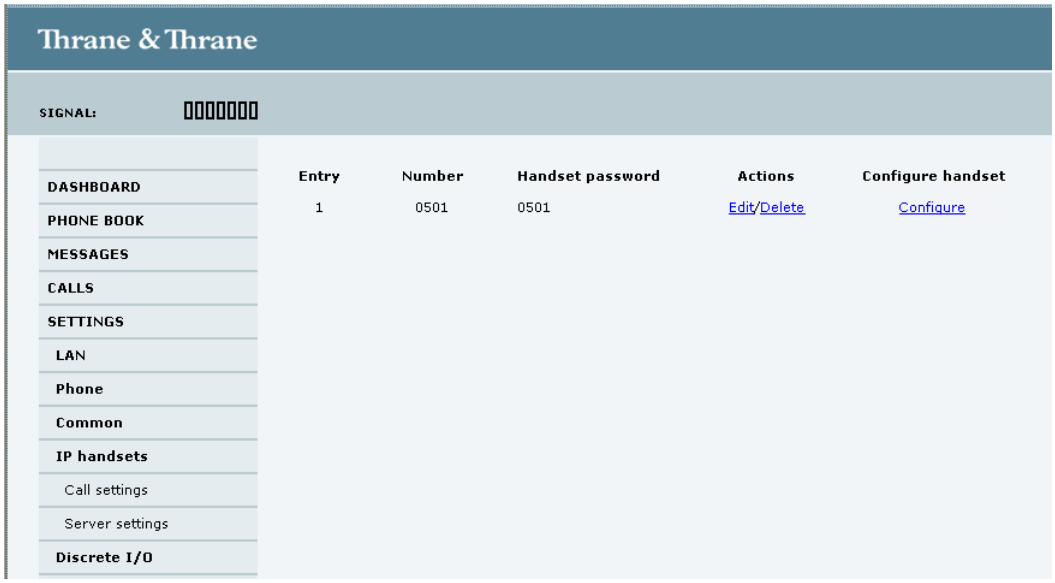
However, you may want to change the password or access the internal web interface of the IP handset.

Changing the terminal's settings for your Thrane IP handset

To change the settings for the IP handset, do as follows:

1. If the Thrane IP Handset has not been connected to the terminal before, connect the IP handset to one of the LAN ports (preferably port 1) in the terminal.

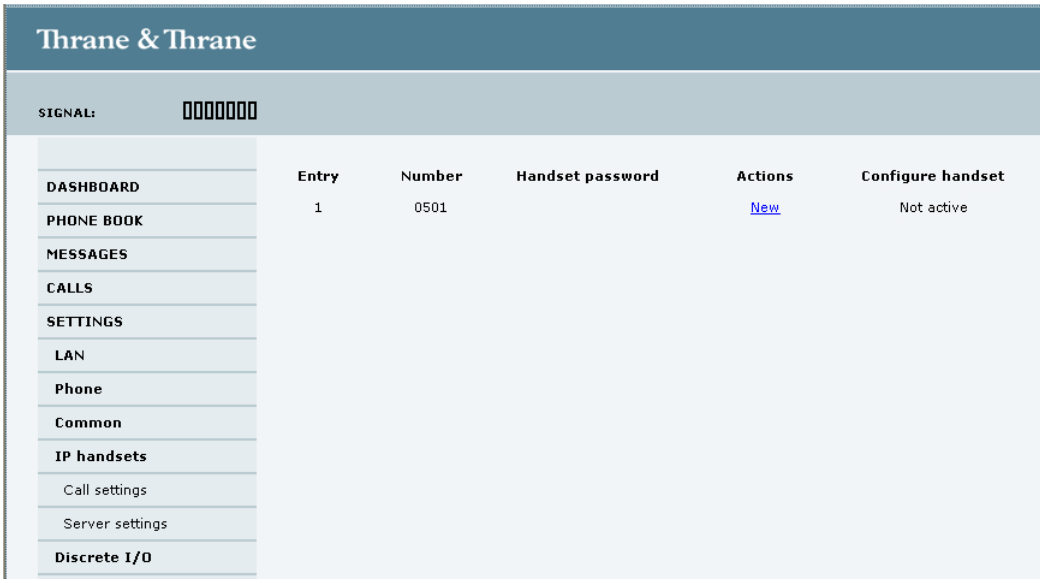
2. In the web interface select **SETTINGS > IP handsets**.



3. Select **Edit** next to the handset to change the password of the handset.
   Remember that you must enter the same password in the IP handset. For details, see the next section *Setting up the Thrane IP handset to match the terminal*.

4. Select **Delete** next to the handset to delete it from the list.
   When the handset is deleted, you can no longer access the terminal with this handset.

The page is updated as shown.



To be able to access the terminal with a Thrane IP Handset again you must click **New** and enter the password. Note that the Thrane IP Handset only supports numbers (no letters) in the password.
Remember to set up the Thrane IP Handset to use the same password.

5. Select **Configure** next to the handset to access the built-in web interface of the IP handset.

> **Note** The Configure link is only available if the handset and terminal are set up to recognize each other, and the handset is connected to the terminal. For further information, see below: *Setting up the Thrane IP handset to match the terminal.*

The web interface of the IP handset opens. It is very similar to the web interface of the terminal, but has a handset icon in the top left corner.
With the web interface of the IP handset you can access the internal settings of the IP handset. For further information, refer to the user manual for the IP handset.

Setting up the Thrane IP handset to match the terminal

In the IP handset, use the display menu system to enter the user name (Number in the web interface) and the password you just entered in the web interface. Do as follows:

1. In the IP handset, select **Menu** and then **SIP** to get the list of profiles.

2. Select the **BGAN** profile and select **Options** (left softkey).

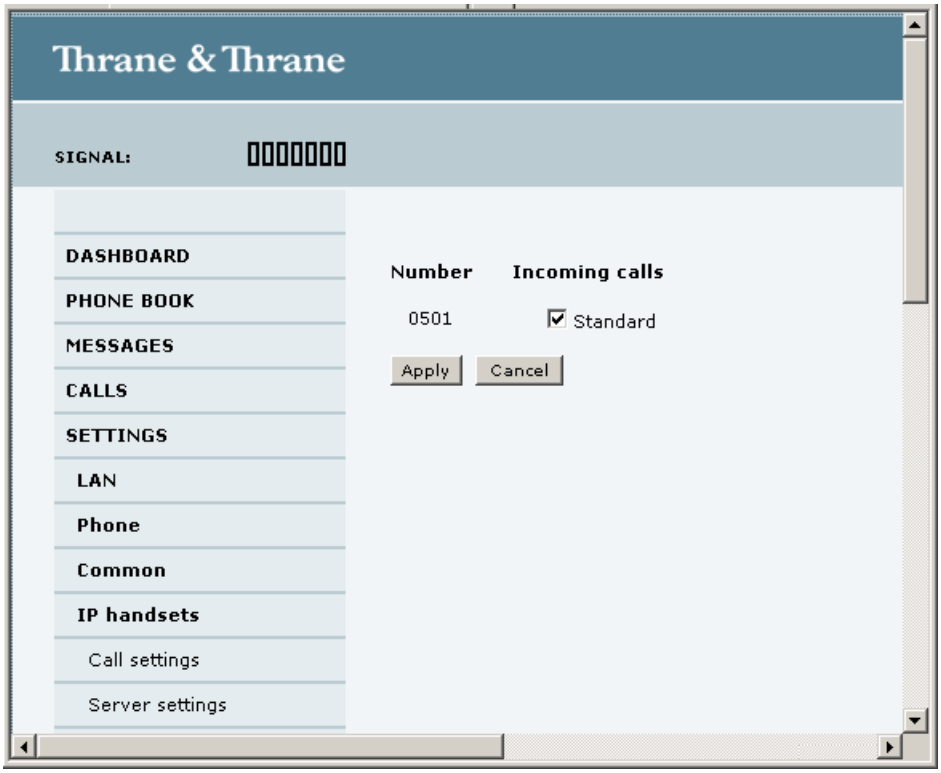
3. Select **Edit/View** and set the user name and password to the same as in the terminal's web interface.
   Note that the user name is also the local number for the handset.

When the terminal and the handset have recognized each other, a **Configure** link appears next to the handset in the **IP handsets** page of the web interface. This link provides direct access to the built-in web interface of the IP handset. For further information, refer to the user manual for the IP handset.

Enabling/Disabling incoming calls to a connected Thrane IP Handset

To enable or disable incoming calls on the LAN (PoE) interface, do as follows:

1. Select **SETTINGS > IP handsets > Call settings**.



2. Select **Standard** if you want to be able to receive calls through the LAN interface.
   Only calls with Standard call type are accepted. If you clear the box you cannot receive calls to the IP handset, but you can still use the handset to make calls **from** the terminal.

3. Click **Apply**.

Setting up the IP handset compatibility

If you are connecting your Thrane IP Handset to the terminal through a separate router with NAT, you must use an IP handset with software version 1.8 or newer and set up the handset compatibility in the web interface of the terminal as described below.

To see the software version of your IP handset, select **MENU > Status > Software version** in the IP handset.

To change the IP handset compatibility, do as follows:

1. Select **Settings > IP handsets > Server settings**.

2. Select the IP handset compatibility as follows:
   - If you are connecting your IP handset through a separate router with NAT, select **Version 1.8 or newer** and use an IP handset with software version 1.8 or newer.
   - If you are connecting your IP handset directly to the terminal or through a switch without NAT, select Version 1.7 or older. In this case you can use an IP Handset with any software version.

Configuring the discrete I/O interface

I/O pins and their functions

The I/O interface on the terminal has 5 configurable I/O pins. You can set up the function of each pin in the web interface. The default functions of the I/O pins are as follows:

Pin 1: Ringer output.
Pin 1 acts as a built-in switch in the terminal. You can configure Pin 1 to be Normally closed or Normally open.

- Normally closed (default):
  The internal switch at pin 1 is normally closed (pin 1 is connected to ground). When the terminal is notified of an incoming call from the satellite interface, the switch opens (no connection to ground). When the call is answered, or the caller gives up and releases the call, the switch is closed again.
- Normally Open:
  The internal switch at pin 1 is normally open (no connection to ground). When the terminal is notified of an incoming call from the satellite interface, the switch is closed (pin 1 is connected to ground). When the call is answered, or the caller gives up and releases the call, the switch is opened again.

Pin 2: Warning/Error output.
Pin 2 acts as a built-in switch in the terminal. Pin 2 can be used to provide an external signal that indicates active warning/error condition(s). You can configure pin 2 to be Normally closed or Normally open.

- Normally Closed (default):
  The internal switch at pin 2 is normally closed (pin 2 is connected to ground). When an alarm occurs, the switch opens (no connection to ground). The switch is closed again when all warnings/errors are cleared.
- Normally Open:
  The internal switch at pin 2 is normally open (no connection to ground). When an alarm occurs, the switch is closed (connected to ground). The switch is opened again when all warnings/errors are cleared.

Pin 3: Mute output.
Pin 3 acts as a built-in switch in the terminal. Pin 3 can be used to provide an external signal that is active during a phone call. The signal can be used to mute external equipment. You can configure pin 3 to Normally closed or Normally open.

- Normally Closed (default):
  The internal switch at pin 3 is normally closed (pin 3 is connected to ground). During phone calls, the switch opens (no connection to ground). When the call is ended, the switch is closed again (connected to ground).
- Normally Open:
  The internal switch at pin 3 is normally open (no connection to ground). The switch is closed (connected to ground) during phone calls. When the call is ended, the switch opens again (no connection to ground).

Pin 4: Radio silence input.
Activation of this pin causes the system to assume radio silence, i.e. to stop all transmission from the system. The terminal gracefully closes all open connections, and deregisters from the BGAN

network. No transmission is allowed until the pin is deactivated. You can configure pin 4 to Active low or Active high.

- Active low (default): Connect pin 4 to ground (< 1.2 V DC) when it should be activated.
- Active high: Connect pin 4 to ground (< 1.2 V DC). When it should be activated, disconnect it from ground.

Pin 5/8: Ignition input.
The ignition function can be used to turn on/off the terminal by means of an external signal. The external signal that triggers the ignition function can be either positive DC voltage or ground. The ignition function uses pin 5 together with pin 8 (DC in). Connect the appropriate pin to the ignition switch as follows:

- Active high (default): Connect pin 5 permanently to Ground. Connect pin 8 to positive DC voltage (10.5-32 V DC) when the ignition is on. To switch off, disconnect pin 8 from the positive DC voltage.
- Active low: Connect pin 8 permanently to positive DC voltage (10.5-32 V DC). Connect pin 5 to Ground (< 1.2 V DC) when the ignition is on. To switch off, disconnect pin 5 from ground.

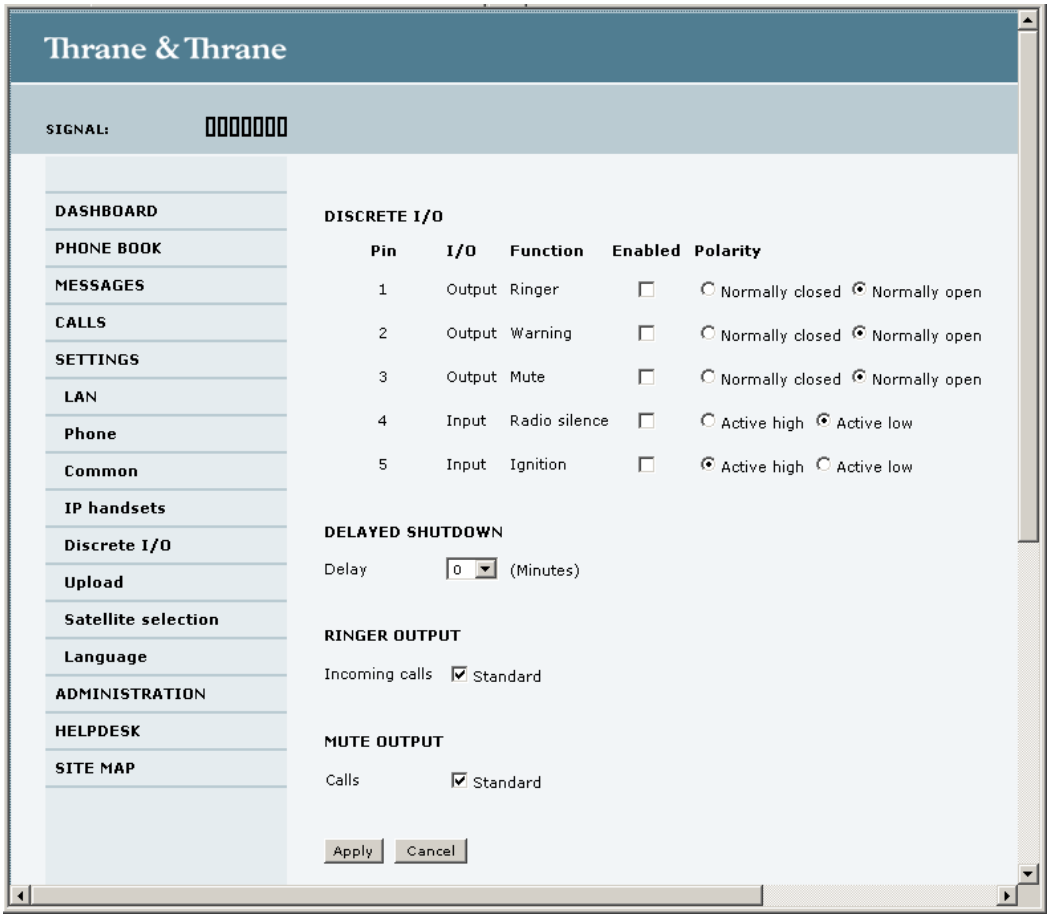
Pin 6: Ground.
(Non-configurable) Pin 6 can be used as an external connection to ground. Pin 6 is connected to Ground inside the terminal.

Pin 7: DC output.
(Non-configurable) Pin 7 can be used as a DC output. The voltage on pin 7 is 9-15 V and the output can supply up to 50 mA. Pin 7 can be used as power supply to a relay, ringer or similar.

Configuring the I/O interface

To configure the I/O pins, do as follows:

1. Select **SETTINGS > Discrete I/O**.



2. For each pin you want to use, select **Enabled**.

3. For each pin, select the function of the pin. Refer to the previous section, *I/O pins and their functions* on page 83.

4. If you are using the Ignition function and you want the terminal to stay on for a few minutes after the Ignition is switched off, enter the number of minutes under **DELAYED SHUTDOWN**. For further information on the Ignition function, see *Using the ignition system* on page 11.

5. If you are using a ringer output, select **Standard** under **RINGER OUTPUT** to activate the ringer on incoming calls.

6. If you are using a Mute output, select **Standard** under **MUTE OUTPUT** to activate the ringer on incoming and outgoing calls.

7. Click **Apply**.

Uploading software

Introduction

The next pages describe how to upload software from your computer to the terminal and how to download the latest software version from the Internet to your computer.

You can upload software from your computer to the terminal without entering the PIN. However, if your SIM card requires a PIN and the PIN is not entered, you must enter the Administration user name and password.

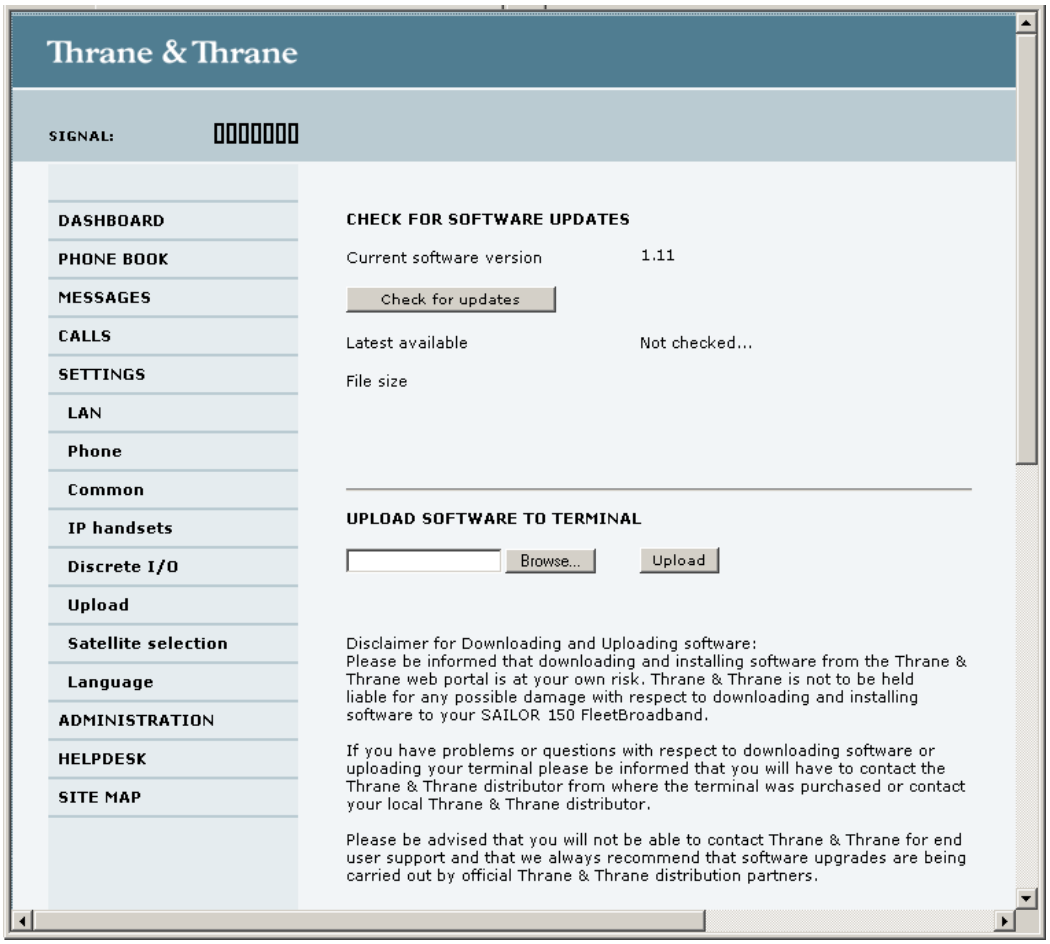
Uploading software from your computer

To upload software from your computer to the terminal, do as follows:

1. Download the new software as described in the next section, or acquire the software from Thrane & Thrane A/S and save it on your computer.

2. Open the web interface and do one of the following:
   - If the PIN has been accepted (or a PIN is not required), select **SETTINGS > Upload** from the left navigation pane.
   - If a PIN is required and the PIN has not been entered, select **ADMINISTRATION**, enter the Administration PIN and password and click **Logon**.
     The default user name is **admin** and the default password is **1234**.
     Then select **Upload** from the left navigation pane.

   The UPLOAD page opens.


Thrane & Thrane
SIGNAL:
DASHBOARD
PHONE BOOK
MESSAGES
CALLS
SETTINGS
LAN
Phone
Common
IP handsets
Discrete I/O
Upload
Satellite selection
Language
ADMINISTRATION
HELPDESK
SITE MAP
CHECK FOR SOFTWARE UPDATES
Current software version
1.11
Check for updates
Latest available
Not checked...
File size
UPLOAD SOFTWARE TO TERMINAL
Browse...
Upload
Disclaimer for Downloading and Uploading software:
Please be informed that downloading and installing software from the Thrane & Thrane web portal is at your own risk. Thrane & Thrane is not to be held liable for any possible damage with respect to downloading and installing software to your SAILOR 150 FleetBroadband.
If you have problems or questions with respect to downloading software or uploading your terminal please be informed that you will have to contact the Thrane & Thrane distributor from where the terminal was purchased or contact your local Thrane & Thrane distributor.
Please be advised that you will not be able to contact Thrane & Thrane for end user support and that we always recommend that software upgrades are being carried out by official Thrane & Thrane distribution partners.

3. In the field **UPLOAD SOFTWARE TO TERMINAL**, click **Browse...**

4. Browse to the new software version and accept it.

5. Click the **Upload** button.
   Note that the upload procedure takes a couple of minutes.

Downloading software from the Internet

Important

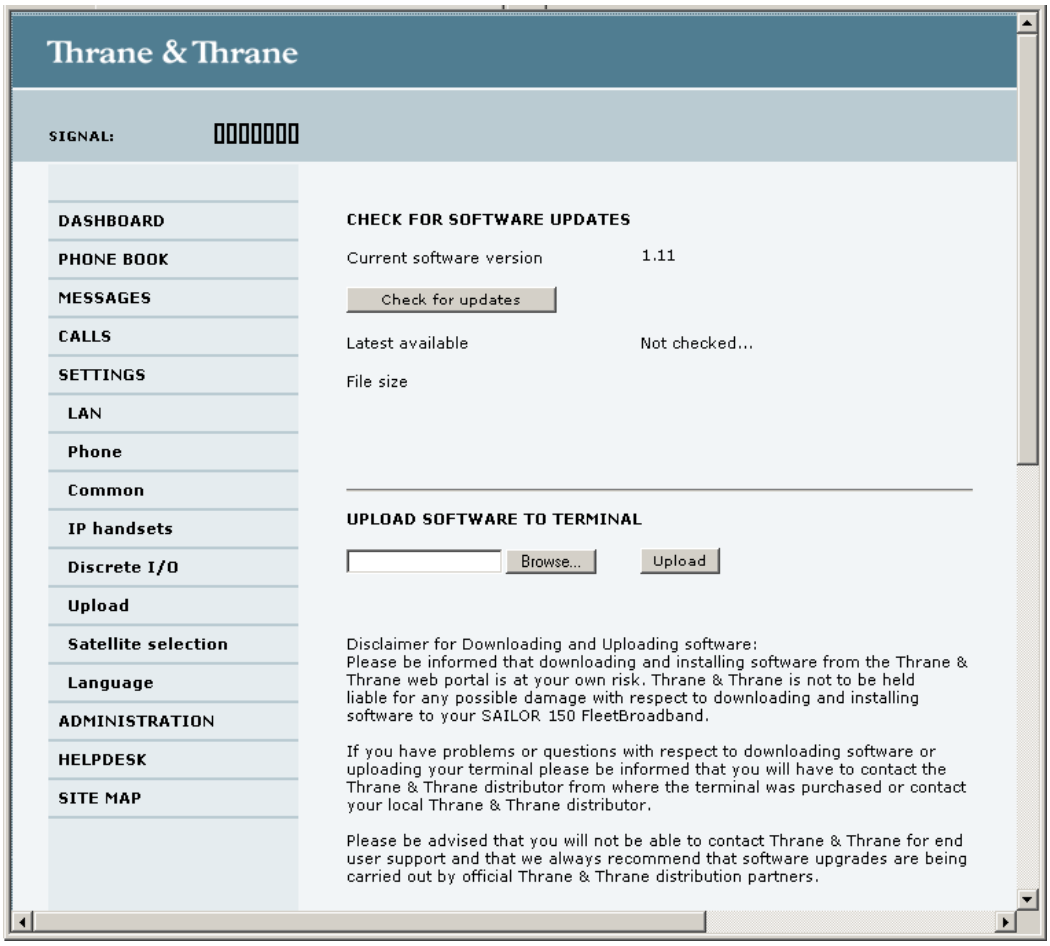
The terminal uses your BGAN airtime subscription to download the new software from the Internet. Note that it can take several minutes to download the software.

If you don't want to use airtime you can acquire the software from Thrane & Thrane, save it on your computer and then connect the computer to the terminal.

To download the latest software from the Internet to the terminal, do as follows:

1. Make sure you have a connection to the Internet from your terminal.

2. Open the web interface and select **SETTINGS > Upload** from the left navigation pane.


Thrane & Thrane
SIGNAL:
DASHBOARD
PHONE BOOK
MESSAGES
CALLS
SETTINGS
LAN
Phone
Common
IP handsets
Discrete I/O
Upload
Satellite selection
Language
ADMINISTRATION
HELPDESK
SITE MAP
CHECK FOR SOFTWARE UPDATES
Current software version
1.11
Check for updates
Latest available
Not checked...
File size
UPLOAD SOFTWARE TO TERMINAL
Browse...
Upload
Disclaimer for Downloading and Uploading software:
Please be informed that downloading and installing software from the Thrane & Thrane web portal is at your own risk. Thrane & Thrane is not to be held liable for any possible damage with respect to downloading and installing software to your SAILOR 150 FleetBroadband.
If you have problems or questions with respect to downloading software or uploading your terminal please be informed that you will have to contact the Thrane & Thrane distributor from where the terminal was purchased or contact your local Thrane & Thrane distributor.
Please be advised that you will not be able to contact Thrane & Thrane for end user support and that we always recommend that software upgrades are being carried out by official Thrane & Thrane distribution partners.

3. Click **Check for updates**.
   The terminal will now connect to the Internet through the BGAN network, using your airtime subscription. It may take a minute or two to obtain the new software version.
   When the new software version is found, the web interface shows the new software version and a link for downloading the software.

4. Click the link to download the new software to your computer.
   After saving the software, follow the procedure in the previous section (*Uploading software from your computer*) to upload the software from the computer to your terminal.

Selecting the preferred BGAN satellite

Overview

By default the terminal is set up to automatically find the most appropriate satellite to connect to ("Auto" mode). However, if you are located in an area with more than one BGAN satellite available, you can select the satellite you prefer to use when registering on the BGAN network.

To select the preferred BGAN satellite

To select the preferred BGAN satellite, do as follows:

1. Select **SETTINGS > Satellite selection** from the left navigation pane.

2. Select the satellite you prefer to use.
   If you select **Auto** (the default setting) the SAILOR 150 FleetBroadband system automatically uses the most appropriate satellite.

   Important If you have any ongoing calls or data sessions, they will be terminated when you click Apply!

3. Click **Apply**.

The SAILOR FleetBroadband terminates all ongoing connections and deregisters from the current satellite before registering on the new satellite.

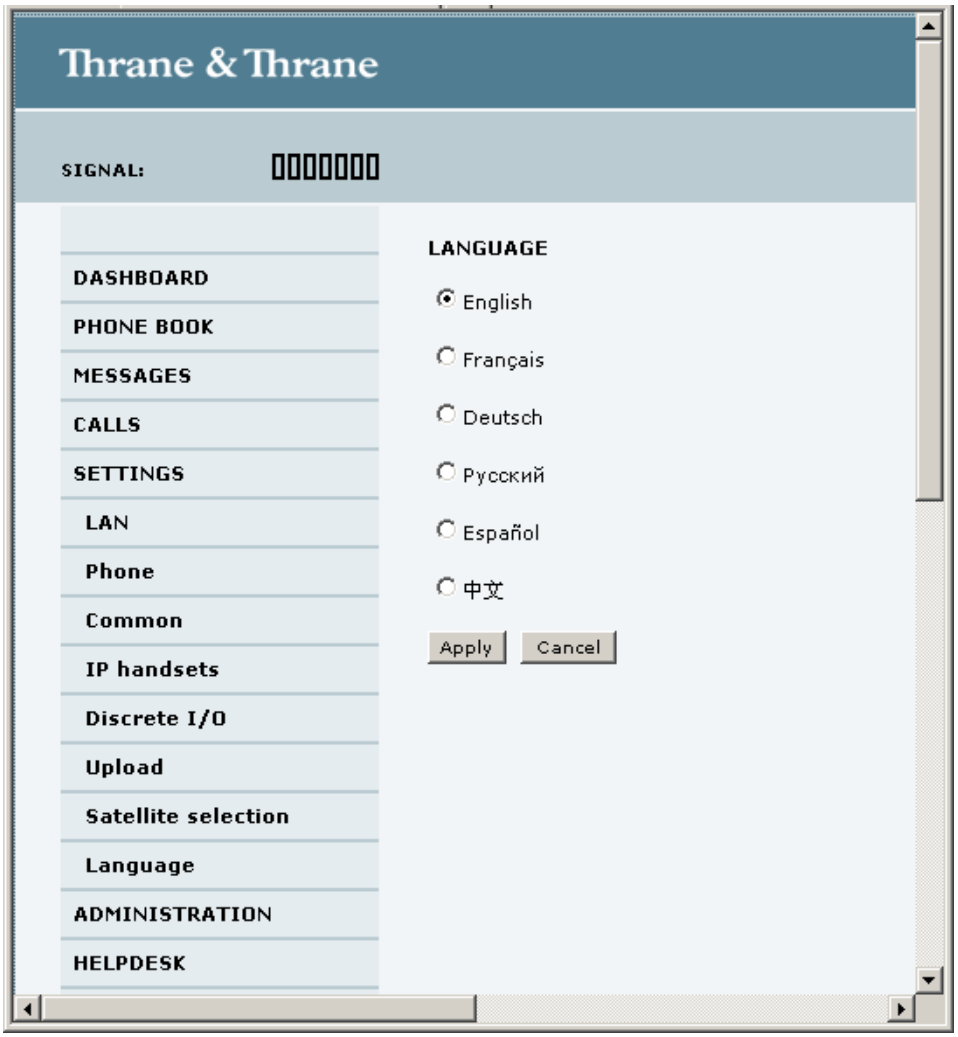
Note If you have selected one of the satellites, your SAILOR 150 FleetBroadband system will only try to register on the selected satellite. This means that if the antenna is outside the coverage area for that satellite, the SAILOR 150 FleetBroadband system will not be able to register with the BGAN network.

Selecting the language

The default language of the web interface is **English**. You can change the language to **French, German, Russian, Spanish** or **Mandarin (Chinese)**.

To change the language, do as follows:

1. Select **SETTINGS > Language**.



2. Select a language from the list.

3. Click **Apply**.

Administration

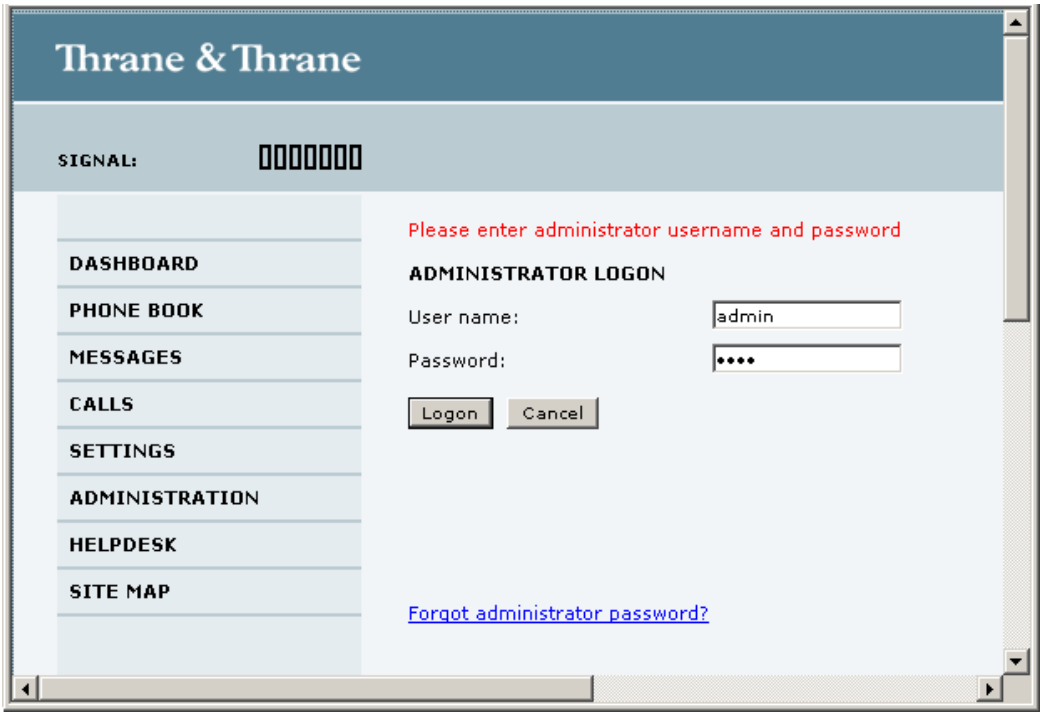
Accessing the administration settings

Logging on

The Administration settings require an Administration user name and password. To log on as administrator, do as follows:

1. Select **ADMINISTRATION** from the left navigation pane.

2. Enter the Administration user name and password.
   The default user name is **admin** and the default password is **1234**.



   If you have forgotten the administrator password, you can reset the password by clicking the link at the bottom of the page. For further information, see the next section *Resetting the administrator password*. The old user name and password will apply until you have finished the reset procedure.

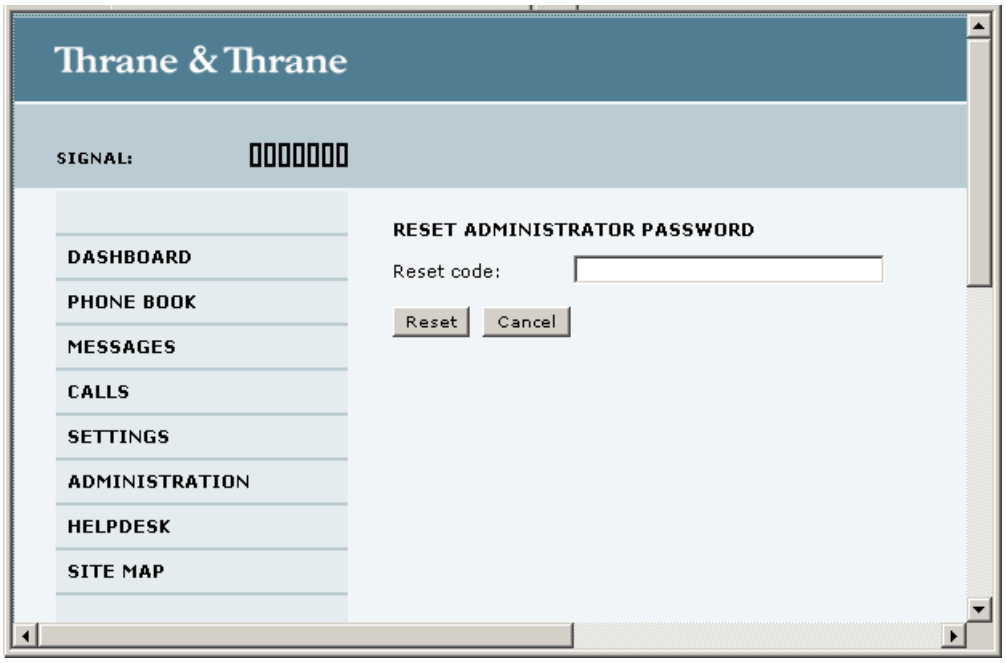
3. Click **Logon**.
   The Administration page is now updated to let you change the user name and password, Save/load a configuration or log off Administration.

Resetting the administrator password

If you have forgotten the administrator password, do as follows:

1. Contact your supplier for a reset code.
   Please report the serial number and IMEI number of the terminal.
   You can find the serial number and IMEI number in the **Dashboard**.

2. Click the link **Forgot administrator password?** at the bottom of the ADMINISTRATOR LOGON page (see the previous section).



3. Type in the reset code obtained from your supplier and click **Reset**.

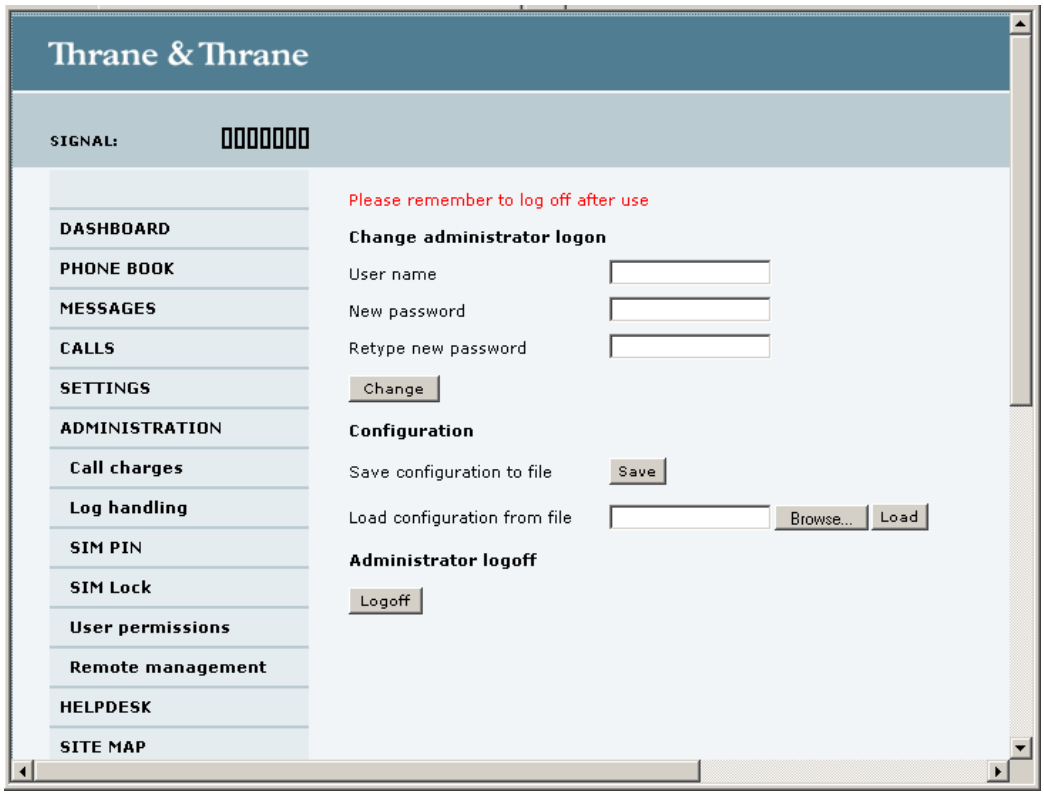
4. Type in the user name **admin** and the default password **1234**.

5. Click **Logon**.
   For information on how to change the password, see the next section *Changing the administrator password*.

Changing the administrator password

To change the administrator password, do as follows:

1. After entering the administrator user name and password in the **ADMINISTRATION** page, locate the section **Change administrator logon**.



2. Type in the existing user name.

3. Type in the new password and retype it on the next line.

4. Click **Change**.
   At the next logon the new password is required.

Saving a configuration to a file

If you need to reuse a configuration in another terminal of the same type and software version, you can save your current configuration to a file, which can then be loaded into the other terminal.

Note | Configuration files can only be exchanged between terminals with the same software version!

To save your current configuration to a file, do as follows:

1. In the **ADMINISTRATION** page, under **Configuration**, click **Save**.
2. Accept the default destination file name or type in the destination file name and location.
3. Click **OK**.
   The configuration is now saved to a file. This file is used to load the configuration into another terminal. See the next section.

Loading a configuration from a file

To load a configuration from a file, do as follows:

1. In the **ADMINISTRATION** page, under Configuration, click **Load**.
2. Click **Browse...** to browse to the file you want to import. Then click **Open**.
3. Click **Load**.
   The new configuration is now loaded into your terminal.

Logging off administration

If you have not entered anything for 30 minutes under ADMINISTRATION, you are logged off automatically.

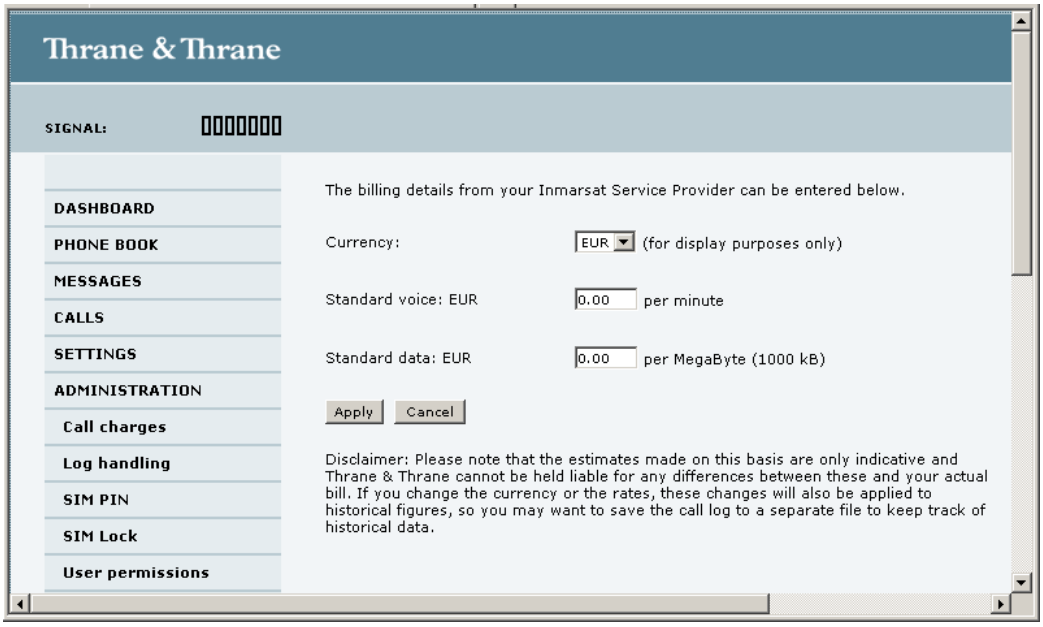
To log off manually, click **Logoff** under administrator logoff in the **ADMINISTRATION** page.

Call charges

If you know the tariff for your subscribed services, you can enter these tariffs in the web interface and automatically calculate the charges for your calls and data sessions.

To enter the call tariffs, do as follows:

1. From the left navigation pane, select **ADMINISTRATION** > **Call Charges.**


Thrane & Thrane
SIGNAL:
DASHBOARD
PHONE BOOK
MESSAGES
CALLS
SETTINGS
ADMINISTRATION
Call charges
Log handling
SIM PIN
SIM Lock
User permissions
The billing details from your Inmarsat Service Provider can be entered below.
Currency:
EUR
(for display purposes only)
Standard voice: EUR
0.00
per minute
Standard data: EUR
0.00
per MegaByte (1000 kB)
Apply
Cancel
Disclaimer: Please note that the estimates made on this basis are only indicative and Thrane & Thrane cannot be held liable for any differences between these and your actual bill. If you change the currency or the rates, these changes will also be applied to historical figures, so you may want to save the call log to a separate file to keep track of historical data.

2. Select the currency from the **Currency** drop-down list.

3. Enter the tariff for each of the services.

4. Click **Apply**.
   The entered tariffs are used for estimating the charges for calls and data sessions. The estimated charge is listed for each call or data session in the call log. For further information, see *Viewing the lists of calls and data sessions* on page 48.

Log handling

To clear the logs of the terminal and/or reset the counters for the time connected, do as follows:

1. From the left navigation pane in the **ADMINISTRATION** page, select **Log Handling**.

2. To clear the Call log, click **OK** next to **Clear call log?**.

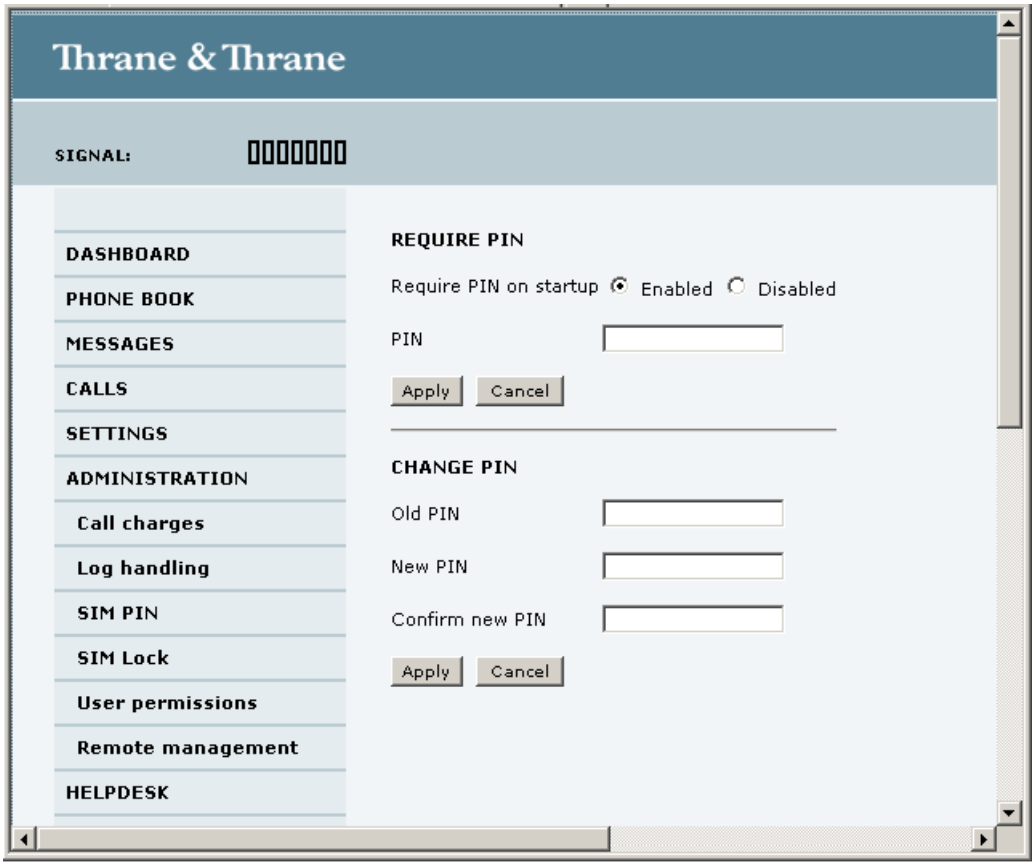
3. To clear the total counters, click **OK** next to **Clear total counters?**.
   This will reset the **Time connected** counters on the Calls page.

Setting up the use of SIM PIN in the terminal

Enabling or disabling the use of a SIM PIN

To enable or disable the use of a PIN to access the terminal, do as follows:

1. Select **ADMINISTRATION > SIM PIN**.



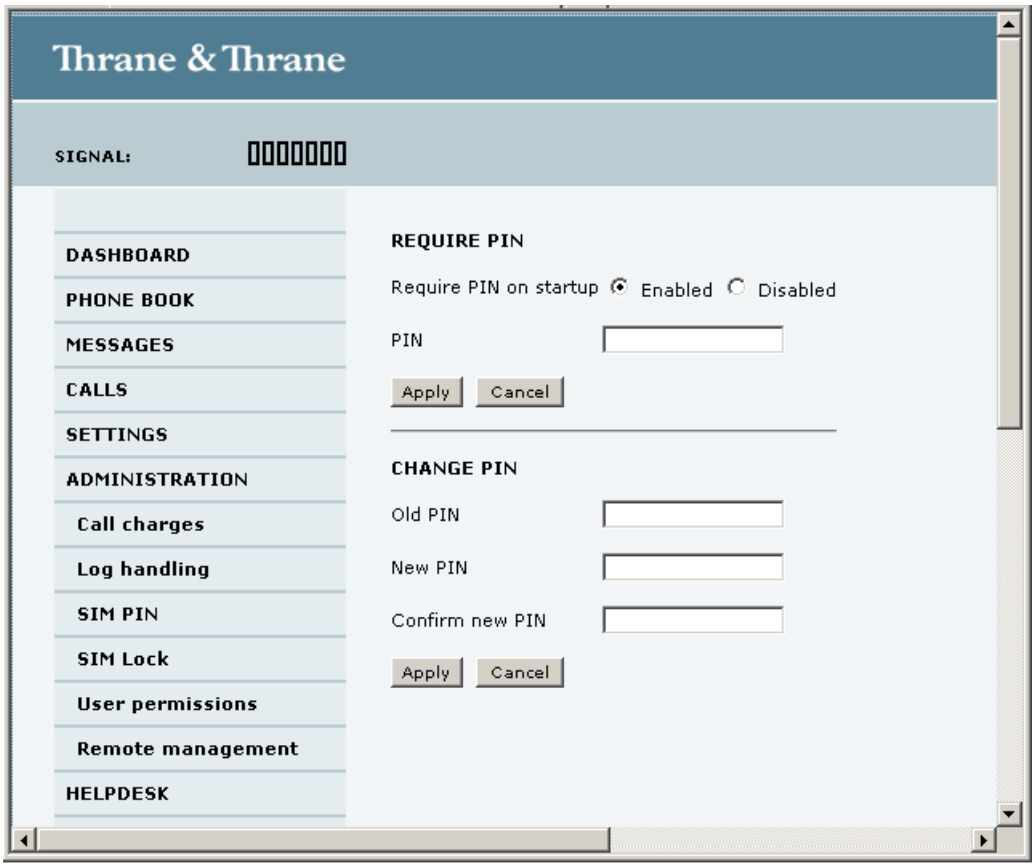
2. Under **REQUIRE PIN** select **Enabled** or **Disabled**.
   - If you select Disabled you can access and use the terminal without entering a PIN.
   - If you select Enabled you must enter a PIN before you can change settings or make calls or data sessions.

3. Click **Apply**.
   The new PIN settings will take effect at next power on.

Changing the SIM PIN

To change the PIN used to access the terminal, do as follows:

1. Select **ADMINISTRATION > SIM PIN**.



2. Under **CHANGE PIN** type in the **Old PIN**.

3. Type in the **New PIN** and retype it on the next line.

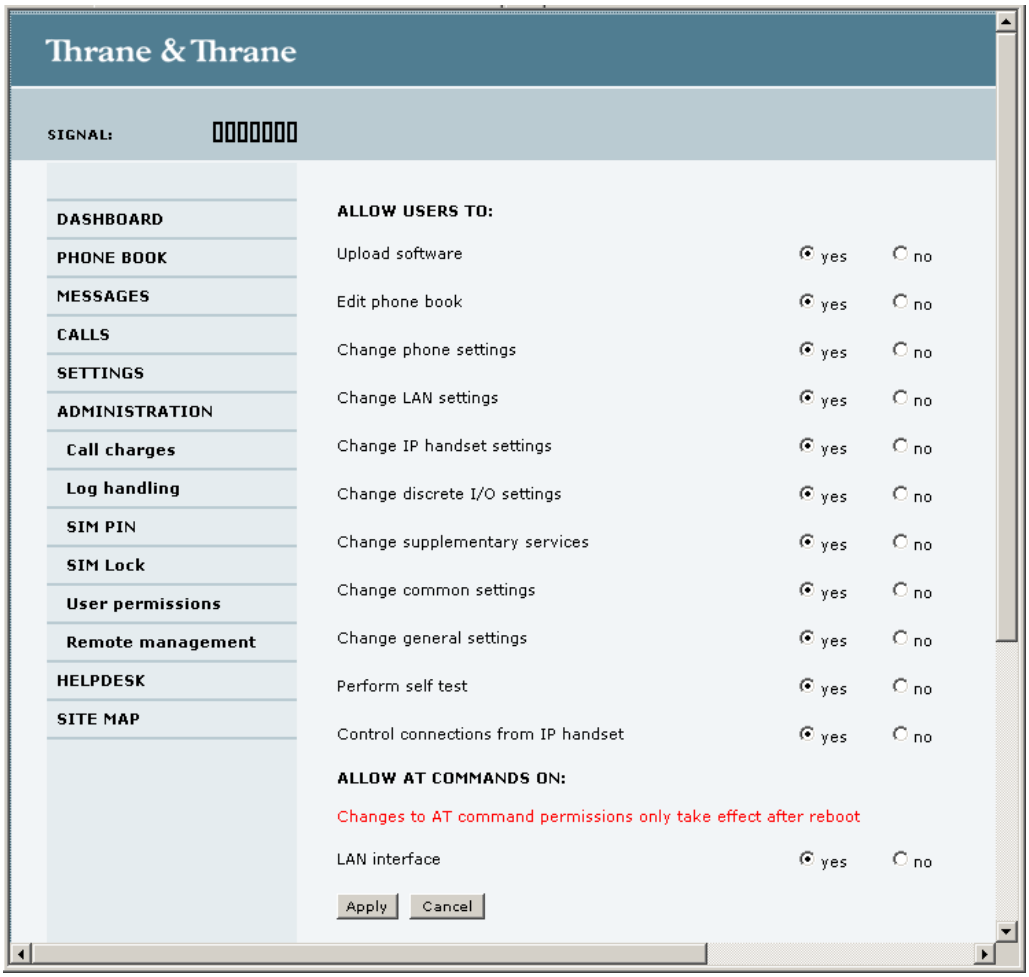
4. Click **Apply**.
   The new PIN settings will take effect at next power on.

Setting up user permissions

You can allow or deny users who are not administrators access to certain functions and make these pages read-only. This is useful if you want to protect the system against unintended changes. We recommend studying this screen thoroughly and deciding to which areas of the system you want to give non-administrator users access.

To set up the user permissions, do as follows:

1. From the left navigation pane, select **ADMINISTRATION > User permissions**.



2. For each item under **ALLOW USERS TO:**, select
   - **yes** to allow access or
   - **no** to block access to the settings.

   "Change general settings" means change the settings on the SETTINGS main page, that is enabling/disabling the L-Band interface.
   "Control connections from IP handsets" means to start/stop data sessions using the Thrane IP handset.

3. At **ALLOW AT COMMANDS ON:**, select
   - **yes** to allow the use of AT commands on the LAN interface, or

- **no** to block the use of AT commands on the LAN interface.

Note | This setting does not take effect until the terminal is restarted.

AT commands are low-level commands used to control modems, in this case the SAILOR 150 FleetBroadband terminal. They are typically used during service and maintenance or when troubleshooting the terminal.

4. Click **Apply**.
   The settings to which access is denied are now greyed out for the non-administrator user.

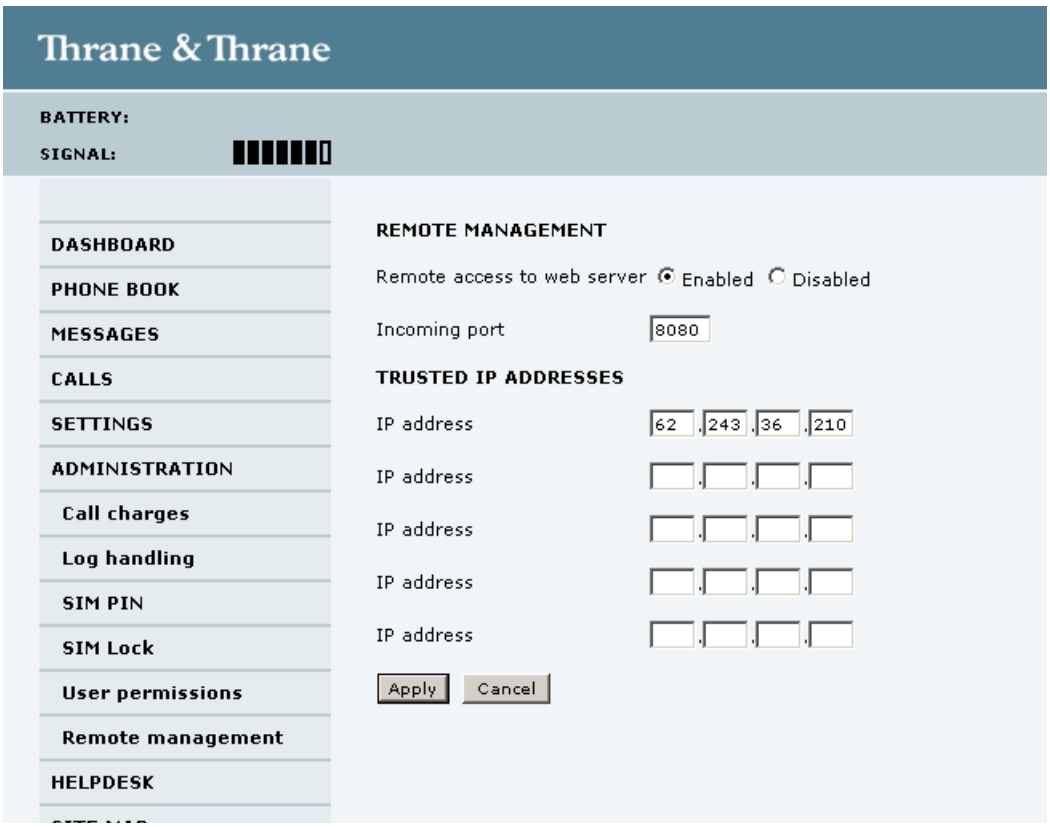
Remote management

You can set up the terminal so that it can be controlled from a remote location.

Note We recommend using a static external IP address for the terminal in order to provide easy access to the terminal. For information on how to set up a static IP address, refer to step 5. on page 61 in the section *Setting up the Default network user group*.

To set up the terminal for remote management, do as follows:

1. From the left navigation pane, select **ADMINISTRATION > Remote management**.



2. Select whether remote access should be **Enabled** or **Disabled**.

3. Type in the **Incoming port** number.

   Note The port number must be available at your service provider.

4. Under **TRUSTED IP ADDRESSES**, type in the IP addresses of the devices you want to give access to the terminal.

5. Click **Apply**.

You can now access the terminal from one of the trusted IP addresses, using the incoming port defined in the Incoming port field.

Help desk and diagnostic report

Accessing the Help desk

If you need help **with airtime-related issues** you may call the Help desk. By default, the Help desk is the phone number for your Airtime Provider, if it is available on the SIM card.

To access the Help desk, select **HELP DESK** from the left navigation pane.

If the Help desk number is available on the SIM card, the number is displayed as a link. To change the number, click the link, change the number and click **Apply**.

If you need help **with terminal- or antenna-related issues** call your local distributor.

Generating a diagnostic report

The diagnostic report contains relevant information for troubleshooting. When contacting your distributor for support, please enclose this file.

To generate a diagnostic report, do as follows:

1. Click **Generate report** from the **HELP DESK** page.
   In some browsers the file may open directly in your browser.

   Note It normally takes about 1 minute, sometimes longer, to generate the report. The report may open in your browser while being generated. Wait until the report is finished before saving the file.

   To save the file, select **File > Save As** in your browser.

2. Choose a location for the file and save it.

Event logging and self test

Viewing the Event list or the Event log

Overview

When an event is registered, the web interface shows an event icon ⚠ in the icon bar as long as the event is active.

The **Event list** only shows events that are currently active, whereas the **Event log** shows the history of events that have occurred.

Event list

To view the event list, click the event icon from the icon bar at the top of the web interface, or select **HELPDESK > Event list** from the left navigation pane.

The Event list page shows a detailed list of active events including the time of the first occurrence, ID and severity of the event message, and a short text describing the error. For more information on the event messages, refer to *Event messages* on page 110.

Event log

The **Event log** shows the same information as the Event list, but also includes events that occurred in the past and are no longer active. Additionally, it lists events of informational character, describing normal phases of operation for the terminal.

To view the Event log, select **HELPDESK > Event log** from the left navigation pane.

Self test

The Self test performs system test on the SAILOR 150 FleetBroadband system, similar to the tests that are performed during the Power On Self Test (POST).

To activate a Self test, do as follows:

1. Select **HELPDESK > Self test**.
2. Click **Self test**.
3. Click **OK** in the Warning dialog.
   The terminal now reboots and performs a self test.

Extended status

To view updated information on the **Extended status page**, click **Refresh**.

The Extended Status page shows the following information:

- The antenna Product ID (must always be TT-3050C).
- The status of the connection to the air interface (IAI-2). This field should normally show “Registered”, unless the system is still in the startup process.
- Ongoing data sessions (IP address) and connection status, e.g. Active or Suspended.
- Ongoing calls and their connection status.

Site map

The web interface also offers a site map page. Use this page to get an overview of the submenus.

To access the site map, select **SITE MAP** from the left navigation pane.

Click on items in the site map to go directly to the relevant location.

Troubleshooting

In this chapter

This chapter gives guidelines for troubleshooting and provides an overview of the different means of status signaling.

Getting support

Overview

If this manual does not provide the remedies to solve your problem, you may want to contact your Airtime Provider or your local distributor.

Airtime support

If you need assistance from your Airtime Provider, please call the help desk.
To see the help desk number, enter the web interface of your terminal and select **HELP DESK**. This help desk number is either taken from the SIM card or entered manually. If no number is available under HELP DESK, check your Airtime subscription documents for a contact number.

System support

If you need assistance with problems caused by the terminal or antenna, please call a distributor in your area.

A list of certified partners and distributors is available on Thrane & Thrane's web site: www.thrane.com. Select **Maritime** and select **Distributors** from the top menu bar.

Uploading software

Viewing software version status

To view the version of the embedded software in the terminal, do as follows:

1. Connect a computer.
2. Enter the web interface and see the **Software version** field in the **Dashboard**.

Uploading software using the web interface

You can upload software from the web interface.

If you have an administrator user name and password you do not need to insert a SIM card nor to enter the PIN to be able to upload software.

For further information, see *Uploading software* on page 86.

Part numbers

System units

TT-3744A SAILOR®150 FleetBroadband system

Item	Part number
SAILOR 150 FleetBroadband antenna	403050C
SAILOR 150 FleetBroadband terminal	403739A

TT-3670A Thrane IP Handset & Cradle, wired

Item	Part number
Thrane IP Handset, wired	403672A
Thrane IP Cradle, wired	403674A

Troubleshooting guide

The below table provides information on some of the problems that might occur, including possible causes and remedies to solve the problems.

Problem	Possible Cause	Remedy
No signal or weak signal from the BGAN satellite.	The view to the satellite is blocked.	Make sure the antenna has a clear view in all directions. See the installation manual for details.
	The antenna cable is not properly connected.	Check that both ends of the cable are connected properly according to the guidelines in the Installation manual. Also check that no connectors are damaged.
	The system is set up to use one specific satellite, but the system is outside coverage from that satellite.	Enter the web interface. Select **SETTINGS > Satellite selection.** Select **Auto** and click **Apply**. The system will now search for the satellite with the strongest signal and attempt to connect.
No transmission on the BGAN network is possible.	The Radio silence function is activated from an external device connected to the I/O interface of the terminal.	If the Radio silence function should not be activated, deactivate it from the external device.
Connection to the Internet cannot be established.	Your network user group does not allow Internet access.	The administrator can access and change network user groups in the built-in web interface of the terminal.
The web interface cannot be accessed.	The browser is configured to use a proxy server.	For Microsoft Internet Explorer, select **Tools > Internet Options > Connections > LAN Settings** and uncheck **Use a proxy server for your LAN**.
	You have entered a wrong IP address.	Check the IP address and re-enter it. If you do not have the correct IP address, you can set the IP address temporarily to the default address (192.168.0.1) by pressing the Reset button. See *Function of the Reset button* on page 119.
	You are connected using VPN	Close down your VPN connection.

Problem	Possible Cause	Remedy
A Phone connection cannot be established.	The cable is not properly connected.	Connect the cable.
	The cable type or connector type is not correct.	For information on the correct type of connector and cable, refer to the installation manual.
No phones are ringing on incoming calls	The Mute function is activated from an external device connected to the I/O interface of the terminal.	If the Mute function should not be activated, deactivate it from the external device.
A LAN connection cannot be established.	The cable is not properly connected.	Connect the cable.
	The cable type or connector type is not correct.	For information on the correct type of connector and cable, refer to the installation manual.
	The connected equipment is set up to use a static IP address and • the IP address is reserved for internal use in the terminal, or • the terminal is set up to assign a dynamic IP address to the equipment.	Do one of the following: • Change the IP address of the connected equipment to an IP address that is not reserved. See *List of reserved IP subnets* on page 120. • Set up the equipment to use a dynamic IP address, or disable DHCP in the terminal. See step 2. in the section *Setting up the local LAN IP addresses* on page 56.

Problem	Possible Cause	Remedy
An IP handset connection cannot be established.	The cable is not properly connected.	Connect the cable.
	There is no power (PoE) in the LAN interface. The reason may be that there is not enough power to supply PoE for the LAN interface.	Check that the input voltage is within the specified range (10.5 - 32 V DC; 11.5 A - 4 A). Check that you do not have too many power-consuming devices connected. The maximum available output power on the LAN (PoE) interface is 32 W. If possible, disconnect other connected devices.
The administrator password does not work.	Someone has changed the administrator password.	If the correct password is not found, you have to reset the password. Contact your supplier for a reset code. You must provide the serial number and IMEI number of the terminal. Then enter the web interface and reset the password as described in: *Resetting the administrator password* on page 92.

Status signaling

Overview

There are many ways of troubleshooting if an error occurs. The terminal has different means of status signaling, to help you find the cause of a problem:

- **Indicator**.
- **Event messages.**
- **Event log.**

Indicator, event messages and logs are described in the following sections.

General status indicator functions

Power indicator

Behavior	Meaning
Green	Power OK.
Flashing green	The terminal is powering up.
Flashing orange	The terminal is closing down.
Off	No power.

Event messages

Display of event messages

The terminal can detect events during POST (Power On Self Test) or CM (Continuous Monitoring). When the terminal detects an event that requires your action, it issues an event message.

You can see the active event messages in the web interface by clicking the warning symbol in the icon bar at the top in the web interface. You can also see the messages in the Thrane IP Handset.

All events are logged in the event log. For information on the event log, see *Viewing the Event list or the Event log* on page 102.

List of events

The following list explains the events that may show in the web interface of the terminal.

Note Events with “Info” level are not included in this list. Only events that can appear in the alarm list and cause a warning icon ⚠ in the web interface are included.

ID	Event Text	Explanation	Remedy
00100 to 00199	System data damaged	Important system data is damaged	Do not use the terminal. Contact your distributor.
00210 to 00219	SIM module error	The SIM interface on the terminal cannot be used.	Contact your distributor.
00240 to 00249	Temperature sensor error	The terminal is in danger of overheating.	Do not use the terminal. Contact your distributor.
00260 to 00269	System error	The terminal cannot communicate on the satellite network.	Contact your distributor.
00270 to 00279	Voice module error	Voice services cannot be accessed by the terminal	Contact your distributor.
00280 to 00289	Ethernet module error	The Ethernet interface on the terminal cannot be used.	Contact your distributor.
00300 to 00309	GPS module error	The GPS module is out of function. The terminal cannot obtain a valid GPS position.	Contact your distributor.
00340 to 00349	2-wire failure	The Phone interface of the terminal cannot be used.	Contact your distributor.
00350 to 00359	AD9864 calibration data error	Internal error in the receiving part of the terminal.	Contact your distributor if the problem persists.
00360 to 00369	No antenna found	The terminal cannot communicate with the antenna.	• Check the cable between terminal and antenna. • Reboot the terminal.
01010 to 01019	Temperature too low (critical)	Low ambient temperature is causing the performance of the terminal to be degraded or halted.	Move the terminal to a warmer location. For information on ambient temperature limits, see the installation manual.

ID	Event Text	Explanation	Remedy
01020 to 01029	`Too low temperature warning`	Low ambient temperature is causing the performance of the terminal to be degraded or halted. The terminal will assume radio silence if the problem is in the ACM module of the antenna.	Move the terminal to a warmer location. For information on ambient temperature limits, see the installation manual.
01110 to 01119	`Temperature too high (critical)`	**Terminal:** Critically high temperature is causing the terminal to shut down. Antenna: Critically high temperature is causing the antenna to stop transmission.	If possible, move the failing unit to a cooler location. For information on ambient temperature limits, see the installation manual. Contact your distributor if the problem persists.
01120 to 01129	`Too high temperature warning`	High ambient temperature is causing the performance of the system to be degraded or halted. The bit rate is reduced.	Move the terminal to a cooler location. For information on ambient temperature limits, see the installation manual.
01300 to 01309	`No GPS fix`	The GPS receiver has not yet achieved position fix.	Make sure the view to the GPS satellites is not blocked. Note that in some cases it may take up to 10 minutes to obtain GPS fix.
01400 to 01409	`Satellite signal lost`	The SAILOR 150 FleetBroadband no longer receives a signal from the satellite.	Make sure the SAILOR 150 FleetBroadband has a clear view to the satellite.
01500 to 01509	`SIM card missing`	No SIM card is detected in the SIM slot.	Insert SIM card. If the SIM card is already inserted, try removing and reinserting it.
01600 to 01609	`SOS calls only`	The SIM card is not accepted by the network. Only emergency calls are allowed.	Enter the PIN and wait for network approval. If the problem persists, contact your Airtime Provider.

ID	Event Text	Explanation	Remedy
01700 to 01709	`Registration for voice failed`	The SAILOR 150 FleetBroadband has not yet been allowed to register for voice services (Circuit-Switched).	Restart the terminal. If the problem persists, contact your Airtime Provider.
01800 to 01809	`Registration for data failed`	The SAILOR 150 FleetBroadband has not yet been allowed to register for data services (Packet-Switched).	Restart the terminal. If the problem persists, contact your Airtime Provider.
02000 to 02009	`Satellite signal weak`	The signal from the satellite is weak.	Check the line of sight to the satellite. Check in the web interface under **SETTINGS > Satellite selection** that you have selected **Auto**, or a satellite covering your current position.
02100 to 02109	`Ciphering Off`	The network has turned ciphering off.	Do not transmit data that requires ciphering.
02200 to 02209	`Ethernet data session failed`	Ethernet data session could not be established.	See the call log for the cause of the error. Refer to *Viewing the lists of calls and data sessions* on page 48. If the problem persists, contact your distributor.
02900 to 02909	`Network failed authentication`	The SAILOR 150 FleetBroadband does not accept the network as a valid BGAN network.	Restart the terminal. If the problem persists, contact your distributor.
03500 to 03509	`2-wire calibration failure`	2-wire calibration failed on the Phone interface, because of: 1. Common mode balance error. 2. The phone is off-hook. 3. Wires are shorted to each other or to ground.	1. Check the wires to your phone. 2. Put phone on hook. 3. Check the wires.

ID	Event Text	Explanation	Remedy
03600 to 03609	2-wire operational failure	The Phone interface fails to operate. Possible reasons: 1. Ground shorted. 2. Power overload. 3. Temperature overload.	1. Check the wires. 2. Wait until the event is cleared; then try again. 3. Wait until the event is cleared; then try again.
08002	One or more ports has PoE disabled due to power limitations	The power supply to the terminal has dropped critically. PoE is disabled to ensure enough power to the antenna.	Ensure a stable power supply to the terminal.
08008	Antenna exceeds voltage threshold	The antenna voltage is either too high or too low.	Check the cable to the antenna. Contact your distributor if the problem persists.
08009	Power Hold-up - the terminal can no longer power the antenna	The power supply to the terminal has dropped for too long. The antenna does not have enough power to function.	Ensure a stable power supply to the terminal.
0800B	PoE Overvoltage protection is activated	Overvoltage is detected in the terminal. The terminal will be shut down in 10 minutes.	Do not use the terminal. Contact your distributor.
0800D	Antenna Overvoltage protection is activated	Overvoltage is detected in the antenna. The terminal will be shut down in 10 minutes.	Do not use the terminal. Contact your distributor.
08010	Undervoltage has been detected	The input voltage has dropped below an acceptable level. The terminal will be shut down in 10 seconds if the situation persists.	Ensure a stable power supply to the terminal.
0801B	Lost connection to the GPS receiver	Communication with the GPS receiver in the antenna is lost.	Restart the terminal. Contact your distributor if the warning persists.

ID	Event Text	Explanation	Remedy
0801D	Uploading firmware to antenna	New firmware is being uploaded to the antenna. The Event will be cleared when upload has finished.	Contact your distributor if the Event is not cleared within 5 minutes.
0802C	Firmware update still fails after several retries	The terminal was unable to upload new firmware to the antenna.	Contact your distributor.
0802D	Firmware update failed	The terminal was unable to upload new firmware to the antenna.	Reboot the terminal. Then update the software again. Contact your distributor if the problem persists.
0802E	Firmware is older than current antenna version	The firmware in the antenna is newer than expected by the terminal.	Update the terminal software.
0802F	Antenna main image could not be loaded	Antenna failed to start up normally.	Reboot the terminal. Contact your distributor if the problem persists.
08030	Antenna could not enter main application mode	Antenna failed to start up normally.	Reboot the terminal. Contact your distributor if the problem persists.
08031	Failed to enter normal operation	Antenna failed to start up normally.	Reboot the terminal. Contact your distributor if the problem persists.
08032	Firmware image version lower than active antenna version	The firmware in the antenna is newer than expected by the terminal.	Update the terminal software.
08033	Firmware image doesn't support antenna hardware	The antenna hardware version is not supported by the terminal.	Check that both the antenna and the terminal are of the type SAILOR 150 FleetBroadband. Contact your distributor if the problem persists.

ID	Event Text	Explanation	Remedy
08034	`Antenna failed to exit Flash Manager. Power cycle needed`	New firmware was successfully uploaded to the antenna but the antenna failed to start normally with the new firmware.	Reboot the terminal. Contact your distributor if the problem persists.
08035	`Unable to open port for HPA burst monitoring`	There was an error communicating with the antenna.	Reboot the terminal. Contact your distributor if the problem persists.
08036	`Radio silence is activated`	The Radio silence function is activated. No transmission is allowed.	If the Radio silence function should not be active, enter the web interface and select **SETTINGS > Discrete I/O**. Then clear the **Enabled** box for **Radio silence**.
08045	`Antenna - Startup temperature too low`	The temperature in the antenna is too low for the system to start up	None. If the ambient temperature is outside the specified limits, the antenna may not be able to start up properly. Refer to the installation manual for temperature specifications.
08046	`Timeout of startup sequence - No antenna or antenna temperature too low`	The start-up sequence of the terminal has timed out because: • the antenna is not properly connected, or • the antenna temperature is too low to start up.	Check that the antenna cable is properly connected at both ends.
08048	`All PoE ports except port 1 are shut down due to high temperature`	The temperature in the terminal is too high. PoE port 2 is shut down to reduce the temperature.	Move the terminal to a cooler location, or avoid using PoE on port 2.
08049	`Data rate reduction due to high temperature`	The bit rate of the data channel is reduced because the temperature is too high.	Move the terminal to a cooler location

ID	Event Text	Explanation	Remedy
0804B	`Illegal combination of antenna and terminal`	You are not using the right combination of antenna and terminal.	Only use the antenna(s) intended for use with your terminal.
0804C	`The selected satellite is not visible at current GPS position`	The terminal is set up to use a satellite that is not visible at the current GPS position.	Enter the web interface and select **SETTINGS > Satellite selection**. Then select **Auto** to let the terminal automatically find the satellite with the best signal, or select a satellite visible from your current position.
0804D	`Antenna firmware image is missing in terminal`	The software is corrupt	Upload new software to the terminal. Refer to *Uploading software* on page 86.
08054	`Transmission aborted due to extreme temperature`	The system stops all transmission due to: • critically high temperature in the HPA or ACM module of the antenna, or • too low temperature in the ACM module.	None. The antenna must operate within the allowed temperature range to work properly. For information on ambient temperature limits, see the installation manual.
08056	`USIM rejected`	The type of USIM card inserted in the terminal is not correct for your terminal.	Make sure you have the correct type of USIM card. E.g. an USIM card for a land-mobile system will not work for a maritime system and vice versa.
0912A	`Motor stopped`	The motors in the antenna have stopped because the temperature is critically high or critically low.	When the temperature is normalized the motors automatically start up again.

Logging of events

Diagnostic report

When contacting your distributor for support, please include a diagnostic report.
The diagnostic report contains information relevant for the service personnel during troubleshooting.

To generate the diagnostic report, access the web interface and select **HELPDESK**. Then click **Generate report**.

Event log

The event log holds information of events registered in the terminal or antenna.

The log includes the time of the occurrence, a short description, location of the error etc. This information can help troubleshooting errors in the system. You can see the event log in the web interface. For further information, see *Viewing the Event list or the Event log* on page 102.

Reset button

How to access the Reset button

The terminal has a Reset button placed next to the SIM slot behind the SIM cover. The functions of this button is described in the next section.

To press the Reset button, use a pointed device.

Function of the Reset button

The Reset button on the terminal has the following functions:

Action	Function
With the terminal running, press the Reset button normally.	The terminal IP address and IP netmask are temporarily set to the default value (default IP address: 192.168.0.1). With this function, even if the IP address has been changed and you do not remember the new IP address, you can still access the web interface and see your current configuration. The default value is not saved in the configuration, but is only valid until next reboot.
With the terminal running, press and hold the Reset button for 30 seconds, until the Power indicator on the terminal is flashing orange.	The terminal restores factory settings and reboots the system.
While the terminal is booting, press and hold the Reset button.	**For service use only!** The bootloader initiates software upload. Refer to the installation manual for details.

List of reserved IP subnets

Some IP subnets are reserved for internal use in the terminal. If any of these addresses are assigned to external equipment connected to the terminal, the terminal and connected equipment will not be able to communicate.

The following local IP subnets are reserved for internal use in the terminal. The netmask for all of these subnets is **255.255.255.0**.

192.168.2.0

192.168.3.0

192.168.4.0

192.168.5.0

192.168.6.0

192.168.7.0

192.168.8.0

192.168.9.0

192.168.10.0

192.168.16.0

192.168.17.0

192.168.18.0

192.168.19.0

192.168.20.0

192.168.21.0

192.168.22.0

192.168.23.0

192.168.24.0

192.168.25.0

192.168.26.0

Conformity

CE (R&TTE)

The SAILOR 150 FleetBroadband is CE certified (R&TTE directive) as stated in “Declaration of Conformity with R&TTE Directive”, enclosed in copy on the next page.

Thrane & Thrane A/S

Declaration of Conformity with R&TTE Directive

The undersigned of this letter declares that the following equipment complies with the specifications of EC directive 1999/5/EC concerning Radio & Telecommunications Terminal Equipment.

Equipment included in this declaration

TT-3744A	SAILOR 150 FleetBroadband System:	
TT-3050C	SAILOR 150 FleetBroadband Antenna	PN = 403050C
TT-3739A	SAILOR 150 FleetBroadband Terminal	PN = 403739A

Equipment Applicability

The SAILOR 150 FleetBroadband is a system that provides voice or high speed data communication through the Inmarsat satellite service world wide between a ship and any destination in the world.

Declaration

The safety requirement with respect to the LVD directive 73/23/EC is met by conforming to the harmonized EU standard EN 60950-1. The protection requirement with respect to the EMC directive 89/336/EC is met by conforming to the harmonized EU standards EN 301 489-1, EN 301 489-20 and EN 60945. Effective use of frequency spectrum is met by a conformity assessment by the National Telecom Agency, Denmark, Notified Body No. 0170, on the basis of the harmonized EU standard ETSI EN 301 444.

Manufacturer

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Place and Date

Kgs. Lyngby, 3. July 2009

CE 0170

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DANAK Reg.nr. 5001 Quality System according to DS/EN ISO 9001:2000 by Det Norske Veritas, Denmark A/S

A

APN	Access Point Name. The Access Point Name is used by the terminal operator to establish the connection to the required destination network.

B

BGAN	Broadband Global Area Network. A satellite network based on geostationary satellites, delivering data rates of up to 492 kbps to virtually any part of the earth, with full UMTS (3G) compatibility.

C

CM	Continuous Monitoring
CS	Circuit-Switched. Circuit-switched networks require dedicated point-to-point connections during calls.

D

DHCP	Dynamic Host Configuration Protocol. A protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network.
DNS	Domain Name System. A system translating server names (URLs) to server addresses.

G

Geostationary	Placed in a fixed position relative to a point on the surface of the earth.

I

I/O	Input/Output
IAI-2	Inmarsat Air Interface-2. The air interface used for BGAN. IAI-2 is an evolution of MPDS with new bearer types, which give a wide range of data rates from 16 kbps up to 492 kbps. By utilizing different modulation schemes, variable coding rate and power adjustment, it is possible to change the bearer type to give optimum throughput with efficient use of the

	satellite resources.
IMEI	International Mobile Equipment Identity. A unique number identifying your terminal
IMSO	International Maritime Satellite Organisation. An intergovernmental body established to ensure that Inmarsat continues to meet its public service obligations, including obligations relating to the GMDSS.
IP	Internet Protocol

L

LAN	Local Area Network
LED	Light Emitting Diode

N

NAT	Network Address Translation. An Internet standard that enables a local-area network to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. A NAT module makes all necessary address translations.

P

PIN	Personal Identification Number. A code number used to provide access to a system that has restricted access.
PoE	Power over Ethernet
POST	Power On Self Test. A test sequence that runs every time the system is powered up or reset.
PPPoE	Point-to-Point Protocol over Ethernet. A network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. By using PPPoE, users can virtually "dial" from one machine to another over an Ethernet network, establish a point to point connection between them and then securely transport data packets over the connection.
PS	Packet-Switched. Packet-switched networks move data in separate, small blocks (packets) based on the destination address in each packet.
PUK	PIN Unblocking Key. An eight-digit code used to unblock a SIM card after three incorrect PINs have been entered. The PUK code is supplied with the SIM card.

S

SAS	Satellite Access Station. The gateway between the satellites and the worldwide networks such as Internet, telephone network, cellular network etc.
SIM	Subscriber Identity Module.The SIM provides secure storing of the key identifying a mobile phone service subscriber but also subscription information, preferences and storage of text messages.
SIP	Session Initiation Protocol. An application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants. Used e.g. for Internet telephony.
SMS	Short Messaging Service

U

UTC	Coordinated Universal Time. The International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the Earth's slowing rotation. Leap seconds are used to allow UTC to closely track UT1, which is mean solar time at the Royal Observatory, Greenwich.

V

VPN	Virtual Private Network. A network that is constructed by using public wires to connect nodes. You can create networks using the Internet for transporting data, using security mechanisms so that only authorized users can access the network.

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